Washington Park

ARBORETUM BULLETIN

Published by The Arboretum Foundation
for the University of Washington
Volume 53, No. 3, Fall 1990 $2.50

ABETH C. MI
NTER FOR URB
UNIVERSITY
SEATTLE

Center for Urban Horticulture
Harold B. Tukey, Jr., Ph.D.
Director of Arboreta
Brian O. Mulligan
Director Emeritus
The Washington Park Arboretum
Timothy Hohn
Curator, Plant Collections
John A. Wott, Ph.D.
Professor
Continuing Education
Lynda J. Ransley
Coordinator

Officers of
The Arboretum Foundation
Richard Doss
President
Carol Simons
First Vice-President
Tina Kuhnle
Second Vice-President
Mary Booth
Third Vice-President
Alan Adams, D.D.S.
Fourth Vice-President
Jeannine Curry
Secretary
Keith Patrick
Treasurer
Elizabeth Ayrault Moses
Immediate Past President
Rae Tennyson
Executive Secretary
Rita Lambro
Bookkeeper

Editorial Board of the
Arboretum Bulletin
Jan M. Silver
Editor
Van M. Bobbitt
Mary Booth
Joyce Brewster
Jerry Clark
Jeannine Curry
Valerie Easton
Book Review Editor
Kendall W. Gambrill
Daniel Hinkley
Timothy Hohn
Steven R. Lorton
Virginia Morell
Brian O. Mulligan
Mitsuo Tsukada, Ph.D.
Richard Walker, Ph.D.

Advertising Manager
Susie Marglin (325-4510)

Printed on recycled gloss coated paper
(minimum 50% waste paper).

Concerning This Issue. . .

Pumpkins, the cotton-candy scent of Katsura, and the Arboretum Foundation Fall Bulb and Plant Sale—favorite parts of Northwest autumn. So are goblins and Halloween: Lock the doors and read Arthur Lee Jacobson's grave view of trees in cemeteries.

Ward Horn points out that this is precisely the season to appreciate the importance of certain Arboretum trees in literature and lore. His "walk" takes place close to the Graham Visitors Center. "In the Washington Park Arboretum," Christina Pfeiffer and Curator Tim Hohn describe what's new elsewhere on the premises this autumn. To the south, Portland's Hoyt Arboretum also is poised for fall color and year-around interest, described by Jan Kowalczewski Whitner in "The Northwest Garden Explorer."

In these pages, Daniel Hinkley takes his stand on *Tetracentron sinense* for Northwest gardens. Find "berried treasure" in Virginia Morell's article on deciduous holly. Learn about evergreen viburnum which is a minority in the Arboretum's *Viburnum* collection, yet of special interest to Puget Sound gardeners, according to Director Emeritus Brian Mulligan.

You'll read about lots of trees in this issue. How can your municipality choose the right one for its public places? A solution is found in the *Urban Forestry Notebook*, described here by one of its creators, Sue Ann Funk, a graduate of the University of Washington Center for Urban Horticulture's master's degree program.

Get back to your roots (your tree roots system) in Van Bobbitt's "Northwest Hort Review." Later, Valerie Easton points out articles of Northwest interest in national publications in the latest "Horticultural Reader" and starts your winter reading list, with the help of Mary Booth's book review.

The *Bulletin* editorial board has three new members: Joyce Brewster, Jeannine Curry (the new editorial board secretary), and Mitsuo Tsukada. We welcome their participation.

As Arboretum Foundation members you are the most literal of participants in the "green movement." Look for the winter issue of the *Bulletin* which emphasizes how to horticulturally help save the Northwest. We promise to explore the topic further in every issue. It is a journey that starts in the Washington Park Arboretum.

Jan Silver, Editor
The Washington Park Arboretum Bulletin

Cover: David McDonald's photo is of Liquidambar styraciflua *(American sweet gum), in the Washington Park Arboretum. Thanks to Ned Wells, Wells-Medina Nursery, Medina, Washington, for his long-time Arboretum support and his generous sponsorship of the color cover for this issue.*

Viburnum tinus
by Brian O. Mulligan

17

CONTENTS

2 . . A Stand on *Tetracentron sinense* *by Daniel Hinkley*

4 . . . . . A Walk through Literature and Lore *by Ward Horn*

9 . . Choosing the Right Urban Tree *by Sue Ann Funk*

12 . . . . . Deciduous Hollies for Northwest Landscapes *by Virginia Morell*

14 . . . . . Trees in Cemeteries *by Arthur Lee Jacobson*

17 . . . . The Evergreen *Viburnums* in the Washington Park Arboretum *by Brian O. Mulligan*

21 . . . . . In the Washington Park Arboretum *by Christina Pfeiffer and Timothy Hohn*

22 The Northwest Garden Explorer: Hoyt Arboretum *by Jan Kowalczewski Whitner*

24 . . . The Northwest Hort Review: Roots *by Van M. Bobbitt*

Book Review:
25 . . *The Border in Bloom* reviewed *by Mary Booth*

26 . . . . . New on the Shelves of the Elisabeth C. Miller Library *by Valerie Easton*

28 . . . . . The Horticultural Reader *by Valerie Easton*

9

12

14

The Washington Park Arboretum Bulletin is published quarterly, as a bonus of membership in The Arboretum Foundation. The Arboretum Foundation is a non-profit organization that was chartered to further the development of the Washington Park Arboretum, its projects and programs, by means of volunteer service and fund-raising projects. The Washington Park Arboretum is administered through cooperative efforts between the University of Washington, the Center for Urban Horticulture, and the City of Seattle Department of Parks and Recreation. The programs and plant collections are a responsibility of the Center for Urban Horticulture.

For membership information, write to The Arboretum Foundation, University of Washington (XD-10), Seattle, WA 98195 or call (206) 325-4510. Articles on gardening and horticulturally-related subjects are welcome. Please call for guidelines. For permission to reprint any part of the *Arboretum Bulletin*, please contact the Arboretum Foundation for written permission.

© 1990 The Arboretum Foundation.

For information about the activities of The Arboretum Foundation, call (206) 325-4510. To receive information about public programs and lectures of the Center for Urban Horticulture, please call (206) 543-8800 or 545-8033.

William Eng

Tetracentron sinense *fruits from Caerhays Castle, St. Austell, Cornwall, England*

A Stand on *Tetracentron sinense*

by Daniel Hinkley

Ernest Wilson, in 1900, finally discovered the fabled tree he had long hoped to see in the wilds of China—it being, in fact, the sole reason he had traveled that far. With a sense of accomplishment that I only can imagine, he set upon the task of photographing the newly discovered specimen. Climbing a large tree of another species nearby to gain better advantage of the dim light, his focused lens captured in blossom for the first time *Davidia involucrata*, commonly known as the dove tree. In his excitement, the tree on which he climbed merited only brief mention in his journal. Wilson intrepidly balanced himself on a limb of *Tetracentron sinense* to study his trophy.

Placed tenuously on the outer fringes of the Magnolia family are four genera that together are bound by a common thread. Although many taxonomists choose to place *Cercidiphyllum*, *Euptelea*, *Trochodendron*, and *Tetracentron* in their own families, all share the distinction of having the water conductive tissues of their roots, stems, and leaves composed of tracheids. These four genera are the only known flowering plants to lack the tissue, known as vessels, otherwise encountered in the angiosperms. Rather, they rely on the same type of tissue, though more primitive, found in the conifers to suction water and nutrients from the soil and deliver them to the superstructure of the plant above. In the Washington Park Arboretum, all four taxa can be observed side by side on the west side of Arboretum Drive East, immediately south of the Woodland Garden.

My introduction to this plant came by the silhouette of its leaves against a summer's full moon in Washington Park Arboretum. So impressed by the elegance of the heart-shaped leaves against the smoky sky, each born singly at the end of alternately arranged spurs down the stem, I hastened to return the next morning to learn its identity. Botanically interesting as well as handsome in form and foliage, *Tetracentron sinense* deserves wider recognition as a small tree for urban use, yet it remains perhaps one of the rarest of the hardy exotic trees in cultivation in the United States. Leading horticultural institutions, as well as private collectors, can wait impatiently for years to receive seeds, usually collected from the few plants growing outside of its native range, which extends from central China to eastern Nepal, through the Himalayan range.

Tetracentron can grow to nearly 100 feet in the wilds. It is best represented in western horticulture in England with a handful of specimens over 40 feet in height. The largest, at Caerhays Castle in Cornwall (an original Wilson collection), has been the parent of most seedlings subsequently introduced into other western gardens and private collections, including the two specimens in Washington Park Arboretum. Unfortunately, several large specimens in collections across England were destroyed by the devastating hurricane of 1987.

The rarity in cultivation of this plant probably will continue for some time as there appears to be formidable propagational difficulties to overcome. Propagation by cuttings is extremely difficult, although I have successfully rooted cuttings I took in summer 1990 from a single year-old seedling growing in my garden. Juvenility of the stock plant, as with other hard-to-root taxa, may be a factor in successful rootings of cuttings. There are no known compatible rootstocks for grafting or budding. Seed, which seems to be the only viable method of propagation, is not produced in abundance in any western

garden, and an individual tree can take many years to reach flowering age.

Because of its rarity in commerce, cultural notes regarding garden use of *Tetracentron* are extremely limited. This species now is considered a much hardier and more easily cultivated tree than it was once thought to be. It responds best as an understory tree under filtered light, rather than in an open situation. The specimen in my nursery has responded nicely to a loose organic soil and abundant water during the summer months; however, I suspect that once established it will survive on limited summer irrigation. Ultimately, I will site my plant under a canopy of Douglas-firs, yet close enough to the forest margin to capture the sun's reflection on its newly expanding leaves.

Admittedly, *Tetracentron sinense* lacks many of the qualities that would lend itself to common use in landscape design or the nursery industry. I do not stand alone, however, in realizing the richness and charm this small tree can add to a garden or collection. Had I the privilege of first photographing the famed *Davidia involucrata*, I hope that I might have been equally excited about the dendrological scaffolding on which I perched.

Glossary

Angiosperm, one of two classes of higher plants, comprises the flowering plants with enclosed ovaries.

Tracheids are elongated cells found in the xylem (part of the conduction and support system) of the plant.

Editor's note: An extremely limited number of Tetracentron sinense *will be available through Heronswood Nursery, 7530 - 288th N.E., Kingston, WA 98346.*

Daniel Hinkley is a full-time educator of horticulture at Edmonds Community College, north of Seattle. Since 1988, Dan has been a member of the *Washington Park Arboretum Bulletin* editorial board. He is the owner of Heronswood Nursery in Kingston, Washington.

References

Bean, W.J., and D.L. Clarke, editors. 1980. *Trees and Shrubs Hardy in the British Isles*. Revised 8th edition, vol. 4, pages 573-574. London: John Murray.

Blackmore, Stephen, and Elizabeth Tootill, editors. 1984. *The Facts on File Dictionary of Botany*. New York: Facts on File.

Wilkins, Malcolm. 1988. *Plantwatching: How Plants Remember, Tell Time, Form Partnerships, and More*. New York: Facts on File Publications.

Wilson, E.H. 1913. *A Naturalist in Western China*. London: Methuen.

Wilson, E.H. 1927. *Plant Hunting*. 2 volumes. Boston: Stratford Company.

The Arboretum's Two *Tetracentron*

The two Arboretum plants originated from seeds received from Mr. Julian Williams, Caerhays Castle, St. Austell, Cornwall, England, in December 1960. Some of these were sent to the United States National Arboretum, Washington, D.C., and from there five plants were received back in May 1962. Although 30 plants were raised here from the seeds, apparently none were grown on to planting size, for reasons unrecorded. One of the National Arboretum plants was set in its present site in February 1966; it is now about 25′ in height. The second plant was placed in February 1971; this is now 17′ tall. Neither has as yet flowered.—Director Emeritus Brian O. Mulligan.

Specializing in Fine Residential Properties
in Greater Seattle's Most Sought After
Neighborhoods
Including neighborhoods surrounding the Arboretum,
Broadmoor, Washington Park, Madison Park &
Montlake.
Also Laurelhurst, Windermere, Bellevue and Mercer Island.

Madison House, Ltd.
REAL ESTATE

4227 East Madison Seattle, WA (206) 382-1011

A Walk through Literature and Lore

by Ward Horn

The stories behind these trees make this walk through the Washington Park Arboretum interesting any time of year.

Degree of difficulty: Easy, level walking.

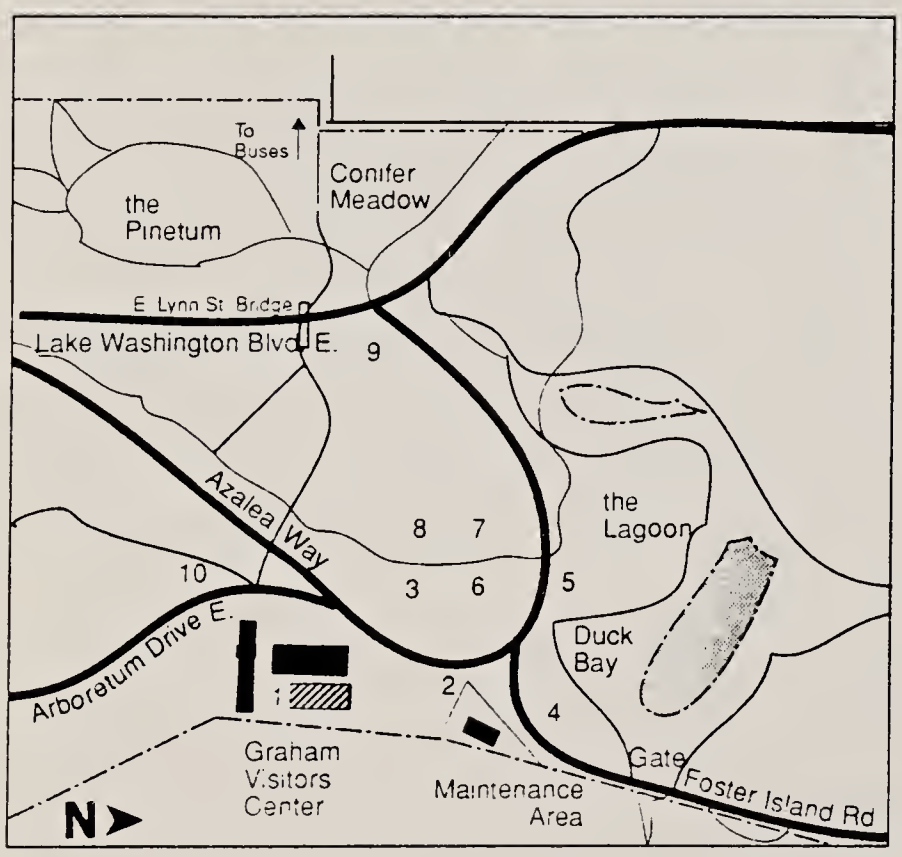
Time: Under an hour. Each stop is less than ten minutes away from the Graham Visitors Center.

Best time of year: Anytime, especially fall and winter. Even without their leaves, these trees are fascinating.

Parking: The Graham Visitors Center parking lot.

Buses: From the #43 and #48, get off at East Lynn Street and 23rd Avenue East. Walk due east on Lynn about three blocks, then over the Lynn Street Bridge and across Azalea Way. You will come out at the Graham Visitors Center.

Start the tour: Number 1 (palm) is south of the Graham Visitors Center parking lot (east of the Visitors Center), near the greenhouse entrance.



Glossary

Aril refers to the external covering or appendage that develops in some seeds after fertilization.

Dioecious is having male and female flowers produced by different individual plants.

Entire leaves have no indentations at the margins.

Lobate leaves have lobes.

1. ***Trachycarpus fortunei*** (Chinese windmill palm)

When we see an occasional palm in the Seattle area, we are apt to ask, "How long will it last?" This species is likely to last a long time, as evidenced by the fine plants in the Carl S. English gardens at the Hiram M. Chittenden Locks in Ballard.

The two plants of *Trachycarpus fortunei* at the Washington Park Arboretum were planted in the summer of 1988 and survived the severe freezes of February 1989 without protection.

Palms are a significant source of food and raw material in tropical parts of the world. They are part of the literature and traditions of many people. Handel's "Largo" is an aria in which Xerxes sings the praises of palms while walking in his own grove. Although date palms are a commercial crop in California, in other mild parts of the United States palms are used as ornamentals.

2. ***Cedrus atlantica*** **'Glauca Fastigiata'** (Atlas cedar)

Walk to the north end of the parking lot toward the entrance gate to the Graham Visitors Center. North of the sign (across the street) is *Cedrus atlantica*.

Cedrus is common in the Puget Sound area;

Whitie Marten

mature trees are easily identified by their flat tops. The common name of this cedar comes from the Atlas Mountains in North Africa. This specimen is a mutant form with a bluish cast to the foliage and an upright habit of growth. A typical *Cedrus atlantica* would have green needles and a spreading branch structure. Several other cultivars of *C. atlantica*, including weeping forms, are available from nurseries.

Cedrus is the true old-world cedar genus. It includes the four species that may be found throughout the Arboretum. Some botanists consider these four species to be geographical forms of a single species. *Cedrus libani*, the Cedar of Lebanon, was sent by King Hiram to Solomon for building his temple. *Cedrus deodara*, found from Afghanistan to Nepal, is the Deodar cedar of Kiplinger's stories. Another species in cultivation at the Arboretum is *Cedrus brevifolia* from Cyprus.

3. ***Quercus glauca*** (Japanese evergreen oak)

Find the next specimen in the oak section across Arboretum Drive East from the Atlas cedar (number 2, above). Look for a small evergreen tree with entire leaves.

We all know the oaks—or do we? There are about four-hundred-and-fifty species of *Quercus* throughout the northern hemisphere. More than seventy-five species, hybrids, or cultivars are in the Arboretum. *Quercus glauca* is evergreen and relatively small; its leaves are entire instead of lobate. About twenty feet north of *Q. glaucus* is

Courtesy CUH

Fraxinus latifolia *(Oregon ash) with three trunks, in Arboretum. In fruit, above.*

another unusual oak, *Q. pontica*, a low shrub with entire leaves.

Many stories could be told about oaks. In Hartford, Connecticut, the colonists hid their charter in the ''Charter oak'' to prevent the king's agents from seizing it. Not so well known is that in the early nineteenth century, the first resource conservation effort in the United States was in Florida where live oak (*Quercus virginiana*) reserves were set aside to ensure a supply of timber for the construction of naval vessels.

4. ***Fraxinus latifolia*** (Oregon ash)

Find our next tree below the maintenance yard's chain link fence. Ash is a member of the olive family, Oleaceae, which includes lilacs, forsythia, privet, jasmine, and, of course, the olive. Some ashes have showy flowers and most have good fall color. Our native ash, *Fraxinus latifolia*, is of no particular ornamental value; it leafs out late and sheds its leaves early, leaving an interesting silhouette. However, it will tolerate wet sites, even where water stands in winter. The Arboretum has a collection of over twenty kinds of *Fraxinus*. The main collection is west of Azalea Way.

Magical properties have long been attributed to *Fraxinus*. Pliny the Elder advised travelers who were forced to spend a night in the open to protect themselves from venomous serpents by drawing a circle on the ground with an ash branch and sleeping within it. Some cowboys in the old West believed that sleeping within a circle of horsehair rope would provide the same protection. No doubt, both precautions were equally effective.

We learn from Teutonic mythology that humans were created when the gods pulled ash trees from the earth. In Wagner's ''Die Walküre,'' Hunding's

Paulownia tomentosa *(empress tree), bottom.*
Quercus glauca *(Japanese evergreen oak), below.*
Photos courtesy of CUH

dwelling of hides and crudely hewn timbers is built around the trunk of a great ash tree. From an ash tree Siegmund pulled the sword that Wotan had buried in it. In the prologue to "Götterdämmerung" the three Norns sing of the mighty "world ash" and the terrible consequences of its destruction. In Norse myth, Yggdrasil was the great ash tree symbolizing the universe.

Gilbert White in *The Natural History of Selborne* (1789) gives two accounts of the magical powers of the ash. The first concerns the shrew-ash. The shrew was thought to cause illness in animals if it should run over them while they were lying down. A cure could be effected by brushing the animal with a shrew-ash branch. A shrew-ash was made by boring a hole in the trunk of an ash tree and, no doubt with proper incantations, sealing a live shrew in the cavity. When White wrote in the 1700s, the community shrew-ash no longer stood in the Selborne village green; a vicar of Selborne had ordered it cut down some years earlier.

The second tale concerns a cure for babies born with ruptures. The cure was effected by splitting an ash sapling, pulling the sides apart, and passing the baby through the opening. The sides were then brought back together and when knitted and healed, the baby would be cured. White said that he saw

several ash trees that showed signs of having been split for this use.

Fraxinus pennsylvanica, the green ash, was used for wooden baseball bats. The makers of the famous "Louisville Slugger" didn't settle for just any old piece of green ash. Buyers went into Kentucky and Tennessee to select ashes growing on north slopes, where those with an even grain were most likely to be found. I wonder if the makers of aluminum bats are as careful about selecting *their* raw material.

5. ***Paulownia tomentosa*** (empress tree)

Find the empress tree across East Foster Island Road from the Oregon ash (number 4). The empress tree is native to China, but widely grown in Japan. It grows very rapidly and produces a firm white wood. *Paulownia* is in the figwort family (Scrophulariaceae) although its flowers resemble *catalpa* in the Bignoniaceae. The huge, upright, and long trumpet-shaped clusters of fragrant lavender flowers come out before the leaves. Leaves are large and heart-shaped. Round seed pods remain on the tree all winter. Dormant flower buds form in late summer and are also a conspicuous winter feature. This tree is not for small gardens because of its surface roots and dense shade; it may send up suckers that break up walks and driveways.

A charming story comes from Japan where, it is said, a *Paulownia* is planted when a girl is born. As she approaches marriageable age, the tree is cut down and a hope chest is made for her from its white wood.

6. ***Taxus baccata*** (yew)

Across East Foster Island Road from the empress tree, near Arboretum Drive East, is *Taxus baccata*. The tree here is a male; a female tree is located about 100 feet to the west.

Yews are dioecious. This conifer does not have a typical cone. Ovules are solitary on short branches with a fleshy disk beneath that finally surrounds the seed and becomes a red and pulpy aril.

Yews have long been in cultivation and the Arboretum has several named cultivars. The Irish yew, *Taxus olia* 'Stricta' ('Fastigiata'), is an upright form. Another species, *T. cuspidata*, the Japanese yew, is hardier and is widely cultivated in many forms. Our native yew, *Taxus brevifolia*, is a very similar understory tree, but unfortunately the Arboretum does not have a specimen.

English archers won the battle of Agincourt with long bows made of yew. It is said that one of the early English kings, possibly Henry II, decreed the planting of yews in churchyards to assure a supply of yew wood for bows.

BIG

B • E • A • U • T • I • F • U • L

BAM•BOO!

and little bamboo, too! 35 varieties for evergreen privacy screens, ground cover, erosion management.

Bamboo Gardens of Redmond

THE NORTHWEST BAMBOO EXPERTS

SELL·INSTALL·MAINTAIN·REMOVE

Wholesale/Retail Nursery: 868-5166

196th Ave NE & Redmond-Fall City Rd

(formerly Bamboo Brokerage)

7. ***Castanea sativa*** (Spanish chestnut)

West of the service road, and about 30 feet to the right from where it starts across from the East Foster Island Road parking lot, is *Castanea sativa*. This is the true chestnut that we roast by open fires. It is a member of the Fagaceae along with beech (*Fagus*), oak (*Quercus*), and other genera.

Chestnuts are delicious. They are an important food in Europe, but not much used in the United States. For cooking directions, look in foreign cookbooks or consult Julia Child and James Beard.

If you take this walk when the trees are in flower, you will note that *Quercus* catkins hang down, whereas *Castanea* catkins grow upright. If you take the walk when the fruit is ripe, you will note that the *Quercus* has a cup-like structure holding acorns, whereas the *Castanea involucrata* is a closed spiny burr.

8. ***Castanea dentata*** (American chestnut)

Castanea pumila (Allegheny chinquapin)

Just west of the service road you are on, are the only true North American chestnuts, *Castanea dentata* and *C. pumila*. *Castanea dentata* was important as a source of timber and food in the Eastern United States. It was used for lumber, mine props, furniture—just about anything that was made of wood.

William Eng

Pseudotsuga menziesii *with 4" long cones.*

Some said its nuts were the best flavored of all chestnuts. Thoreau collected *C. dentata* and stored them in the cellar of his cabin by Walden Pond. Longfellow's village smithy stood under its spreading branches.

Castanea dentata has been wiped out in its native range by the chestnut blight, a parasite fungus that gains entry through wounds in the bark and girdles the stems and trunks. It was discovered in New York City in 1904, where it had been introduced by either the Japanese or Chinese chestnut, both of which are immune. Within thirty years, the fungus had destroyed all of the *C. dentata* in its natural range. Not one tree has been found to be immune, although some continue to send up suckers from the roots which may reach fruiting size, but eventually succumb. Isolated trees, such as this one, have survived outside of their native range. This specimen also appears to be infected now and some of its top branches are dying.

Castanea pumila, twenty feet to the northwest, is a shrubby chestnut that grows naturally from Pennsylvania to Texas.

9. ***Nothofagus dombeyi*** (southern beech)

Find our next tree southwest of *Castanea pumila* (number 8) above Lake Washington Boulevard East. Long before the discovery of plate tectonics, Alfred Wegener proposed a hypothesis of continental drift that was based, among other things, on the distribution of flora and fauna. *Nothofagus* is native to Chile, Argentina, New Zealand, and Australia. A similar distribution is found in some other genera, such as *Fuchsia*, *Embothrium*, and *Eucryphia*, just to mention three found in the Arboretum.

This *Nothofagus dombeyi* is a handsome broad-leaved evergreen from Chile and Argentina. It grows well here and in other parts of the Arboretum. Nearby, a few yards to the north, are two deciduous species that also are from South America, *Nothofagus obliqua* and *N. antarctica*. About fifteen yards to the east is an evergreen from New Zealand, *N. solandri* var. *cliffortioides*. Note the tiered or layered branching pattern. This tree suffered slight defoliation in the February 1989 freeze.

10. ***Thuja plicata*** (Western redcedar)
Pseudotsuga menziesii (Douglas-fir)
Tsuga heterophylla (Western hemlock)

Return now toward the Graham Visitors Center. Across Arboretum Drive East from the Visitors Center is this stand of three native conifers—a fitting close to our visit to trees around the world.

Redcedar was used by Northwest Native Americans for artifacts ranging from giant sea-going canoes and longhouses to small boxes and bowls. The wood is easy to work, light in weight, and durable. Native Americans also used the bark for fiber. Today, we use the wood for shingles, shakes, fences, and the like. It is becoming scarce and is not being replanted because, although it grows rapidly, the wood from young trees is inferior in quality.

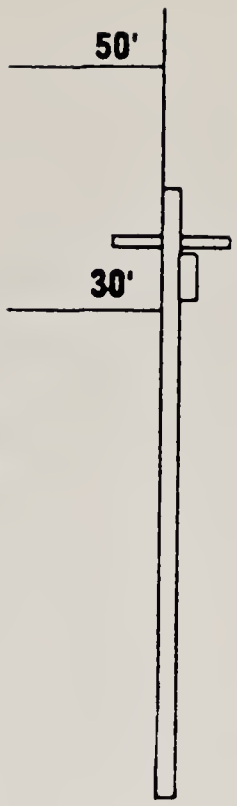
Our lumber industry was built, and still depends, on Douglas-fir. Native Americans apparently had no special use for this tree; this is understandable because the wood is not suitable for small artifacts and would have been difficult to work with stone and bone tools.

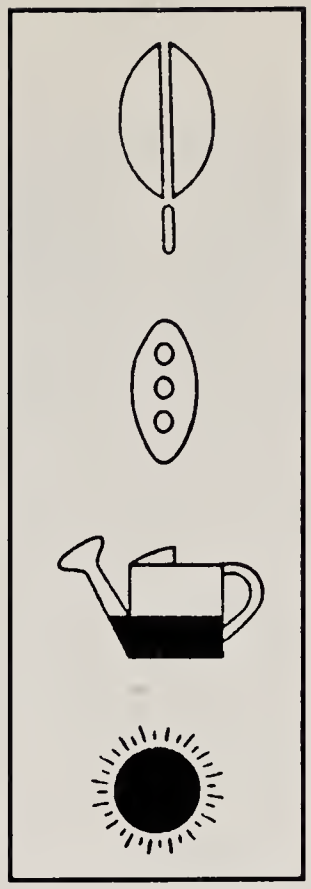
Western hemlock is something of a "Cinderella" tree. Lumber made from the wood warps badly; a length of two by two can curl up like a W.C. Fields trick billiard cue. Boards split when nailed at the end. Before it became a source of wood pulp, lumbermen considered it as a weed tree. Recent methods of curing it have overcome the warping and it is now being used for lumber. However, it is not sold as hemlock; it is now called "Hem-fir!"

Ward Horn is a member of The Arboretum Foundation and is active as an Arboretum guide. This article is based on one of his "Sunday at One" tours. Ward also works on the Seed Exchange Program at the Center for Urban Horticulture.

References

White, Gilbert. 1789. Paperback edition, 1977. *The Natural History of Selborne* (two hardcover versions are in print in Great Britain). New York: Penguin.





Greg MacDonald, Seattle

Is this mature Katsura form (Cercidiphyllum japonicum *'Pendula') suitable for planting under power lines? From the* Urban Forestry Notebook.

Choosing the Right Urban Tree

by Sue Ann Funk

The faculty and staff of University of Washington's Center for Urban Horticulture helped produce the Urban Forestry Notebook. *This effort to help your municipality select and care for urban trees was jointly funded by Puget Sound Power and Light, and the Washington State Department of Natural Resources.*

All of the trees mentioned in this article can be seen at the Washington Park Arboretum.

The Washington Park Arboretum is a favorite place to hide from the harshness of urban living. A pilgrimage to the Arboretum provides for a green environment just like that in parks, front yards, public rights-of-way, and commercial developments. Trees are a major part of the environment that can provide shade, reduce heating and cooling costs, and filter the air. They create a more livable environment within the city.

Planting a tree in an urban setting requires more than just a hole and a tree. Careful thought and planning must go into the selection and subsequent care. When you plant a tree in your front yard, the choice of that one tree can be carefully considered, but what about the mass plantings that take place on rights-of-way? Who makes *those* choices?

Selecting Trees for Your Community

The City of Seattle has a full-time arborist, but in many communities funds are not available for hiring one full time to be available on a contractual basis. In these communities, the selection and care of the urban trees often is delegated to municipal employees who lack knowledge about them. These employees may be your first contact when you seek details about urban trees, so it is essential that they have the correct sources of information.

Many guides for urban tree selection have been published, but none is specifically targeted to assist the municipal employee. This problem was noted by faculty and staff at the University of Washington's Center for Urban Horticulture (CUH), as well as by John Goodfellow, corporate forester for Puget Sound Power and Light Company. John later met with CUH to outline a reference notebook. When I was working on my master's degree the Washington Department of Natural Resources (DNR) sponsored my position, which was to compile and assemble the project. Sarah Watson of Puget Power designed the publication. The main emphasis of the final product, the *Urban Forestry Notebook*, is on plantings in western Washington State, but some trees and issues mentioned are applicable to eastern Washington and similar growing areas.

The *Notebook* has three sections. Refer to the ''Trees'' section to select among 65 species that are best for urban environments. For tree care, find the issue pages that include ''Establishment/Maintenance (tree care), ''Plant Problems,'' and ''Management.'' Arbor Day and facts about ''Trees & Wires'' are covered in that section. Still interested in further facts? Turn to ''References'' for reading lists, sources of additional information, and a glossary of terms used in the *Notebook*.

Choosing Your Tree

The ''Trees'' section of the *Urban Forestry Notebook* recommends species that represent a wide range of tree types for the diverse conditions and circumstances in the urban environment. You'll note some large native trees in that section because they are prevalent in the urban landscape. Medium-sized trees are suitable for park plantings. Smaller trees are more appropriate for planting near power lines. On the page detailing each tree are cultural requirements, ornamental features, pests, drought tolerance, and common cultivars.

The symbols in the margins of each tree page indicate leaf shape, fruit type, drought tolerance, and exposure. On the bottom of the page there is an outline of the tree's shape. To tell at a glance if the tree you chose is appropriate to grow near a power line, see the power line and height chart at the bottom of each tree page.

How would you use this book in selecting a tree for a public right-of-way? Public rights-of-way include traffic islands, planting strips along streets, and vacant lands owned by the city. Suppose there is a location on a public right-of-way where a tree should be planted. No power lines exist on the site, but it is in a residential area. A medium-height tree would be most appropriate for the site, so look at the ''Mature Tree Size Index.'' There are 36 different species from which to choose and you decide to pursue information about *Cercidiphyllum japonicum*, the Katsura tree. Visit the Arboretum's specimens at the head of Rhododendron Glen or south of the Woodland garden (west of Arboretum Drive East). Small Katsuras are in the Graham Visitors Center parking strip. Although viewing the species at the Arboretum will give you an idea of how they grow, remember that plant growth varies. Trees in the Arboretum often will not receive the same kind of stress as trees planted along your busy street.

Turn to the *Cercidiphyllum japonicum* page and look at the symbols. You will discover that the leaves are simple and untoothed, the fruit is a pod, the drought tolerance is moderate, and the plant grows well in full sun. The detailed information reveals that the tree grows to about 60′ tall, but the spread varies and it grows moderately to fast. You also can find that it is a multi-stemmed or single-trunked tree with oppositely arranged leaves that are roundish with heart-shaped bases. The tree may be used effectively as a street tree, but it also is good as a lawn specimen. It may require pruning to establish a single-stemmed habit, but has no serious insects and diseases, and it is from Japan and China.

If a power line existed on the public right-of-way site, the municipal employee would have to look at small trees instead of medium trees. Choose between 23 trees and go through the same process of reading about the trees and viewing them in the Arboretum. Through this process, you or the employee will become more familiar with a wide variety of appropriate trees that tolerate the urban environment.

As a homeowner, the tree pages can help you. In some western Washington communities, certain residential plantings may require city approval. Suppose your neighbor wants to plant a big-leaf maple (*Acer macrophyllum*) in her planting strip, even though the normal spread would interfere with power lines running between your house and her house. When she goes into the appropriate city office to get permission, the employee can show her the information about the width of big-leaf maple and try to interest her in a tree with less spread, such as the columnar European hornbeam (*Carpinus betulus* 'Fastigiata'). The employee then can make a copy of the tree page for the hornbeam and send it home for your neighbor's further consideration. Hopefully a tragic mis-planting will be avoided.

Issues Concerning Your New Tree

To plant, prune, fertilize, discern drought tolerance/irrigation requirements, and to mulch, turn to the ''Establishment/Maintenance'' section. Each of these topics is covered by one-page sheets. Let's say you have read the ''Planning'' page and discovered the correlation between tree location and painted parking dividers. Planting the tree at the same point on the street as the painted parking dividers decreases the chance that car doors will injure the trunk. The importance of considering the unique environmental conditions of each site also is discussed on the ''Planning'' page.

Thomas L. Berger Associates P.S.
2021 Minor Avenue East
Seattle, Washington 98102
(206) 325-6877

Landscape Architecture
Site Planning

After you select a tree, find the "Plant Problems" section that includes infectious diseases, non-living factors (such as mechanical damage), and insects (diagnosis and control). Although it is not a definitive guide to plant problems, start there to gain more information and find out the types of questions to ask. The section on diagnosis, especially, assists the non-specialist to recognize subtle symptoms of a problem.

Urban forest managers will want to look at the "Management" section for a variety of information on topics that may confront them: attracting wildlife in urban areas, trees and wires, and developing a municipal tree ordinance. Components of a municipal tree ordinance are listed (such as giving authority to a shade-tree commission, creating the position of city forester, and listing approved species for the municipality).

Does Your Town Have the *Urban Forestry Notebook?*

To distribute the *Notebooks* to municipalities, an urban forestry forum was held at the Center for Urban Horticulture (CUH). Speakers from across the United States attended to increase awareness and encourage interest in trees in the city. Over 150 representatives of municipalities throughout western Washington came and received copies, from as far north as Bellingham, and west from Port Townsend. Due to the large turnout, it is likely that a representative from your municipality attended and has one.

The Center for Urban Horticulture and the sponsors hope that these books will help improve the quality of selection and care for urban trees. Trees in urban areas are important to the health and well-being of a city and its inhabitants. With proper planning and maintenance, they will continue to provide many benefits to the world around us.

Thanks to Dr. John Wott, Dr. Jim Clark, Dr. Gordon Bradley, and Mr. John Goodfellow for the preparation of the *Urban Forestry Notebook* and this article.

Copies of the Urban Forestry Notebook *are in the Elisabeth C. Miller Library (Center for Urban Horticulture), and the Graham Visitors Center at the Washington Park Arboretum.*

Washington State municipalities needing the Urban Forestry Notebook *may contact Michael Perez-Gibson, DNR, (206) 753-5315.*

Sue Ann Funk completed her master's degree at the Center for Urban Horticulture in 1990 and is now working in her home state of Kansas. The Urban Forestry Notebook was her master's project.

EST. 1888
SWANSONS
Nursery•Greenhouses•Complete Landscaping Service
9701 15th N.W.
Seattle, WA 98117
(206) 782-2544
Open 7 days a week for all your shopping needs.

PLANT A GOLDEN FUTURE
Wholesale growers since 1912
Briggs nursery, inc.
4407 HENDERSON BLVD. • OLYMPIA, WA 98501
(206) 352-5405

Deciduous Hollies for Northwest Landscapes

by Virginia Morell

An asterisk (*) indicates species, including varieties and/or forms, that can be found in the Washington Park Arboretum.

Plant explorer Frank Kingdon-Ward once wrote about "Berried Treasure." This could well describe deciduous hollies. Although deciduous hollies lose their leaves each fall, they clothe their bareness with sparkling berries. Usually they are bright red, with an occasional orange- or yellow-berried one. Many of these deciduous hollies are native to the United States, and all are native east of the Rocky Mountains. They range from large shrubs to small trees, and grow from Michigan to Florida.

Due to a surge of interest since the mid-1970s, breeders have worked at developing new varieties and cultivars with bigger berries and more attractive growth patterns. Hybridization between species has resulted in particularly handsome plants, too. Below are several cultivars and hybrids that add a range of colors and attract birds. They have small leaves and a structure that imparts a delicate effect in front of solid shapes. Deciduous hollies will add a note of grace and light in front of dark conifers and broad-leaved evergreens in the Northwest garden.

Shrubs

**Ilex verticillata*, also known as winterberry, grows in damp, swampy areas from Michigan to Florida, and east along the Atlantic seaboard. Robert Simpson, an eminent Midwest nursery owner who specializes in deciduous hollies, explains that there are two types of this plant. One, native to New England, is much smaller than the one growing in the South which can reach fifteen to twenty feet in height. Branches of this species have been sold for years in florist shops in the Midwest and East during the Christmas season; the leafless branches covered with bright red berries add a unique quality to holiday arrangements. Only recently have Seattle florists discovered how attractive and colorful they can be. However, be prepared when you ask for "holly branches" to be told, "No, they are *Ilex*!"

William F. Kosar, courtesy of Virginia Morell

Ilex verticillata

Ilex verticillata *'Red Sprite' is a dwarf about three-feet high with very large red berries. Several of these are in the Joseph A. Witt Winter Garden at the Washington Park Arboretum. There they are placed in the foreground of *I.* x *altaclerensis* (*I. aquifolium* x *I. perado*). Also consider putting *I. verticillata* in front of rhododendrons or pines where the bright, colorful berries add color against the drab winter landscape.

A number of attractive cultivars have been produced when *Ilex verticillata* is crossed with *I. serrata*, a Japanese deciduous holly. *Ilex* 'Sparkleberry' is a stunning plant of this cross that was developed at the United States National Arboretum. It has won the prestigious Styer Award from the Pennsylvania Horticulture Society and soon will be more readily available from the nursery trade.

The growing range of **Ilex decidua* extends from Maryland to Florida and west to Texas; it can vary in height from ten to twenty feet. The stems are silvery gray and make an attractive contrast to the bright red berries in winter. Many new varieties have been developed with bigger berries and more attractive foliage.

Native to the southeastern United States, *Ilex amelanchier* is a handsome large shrub with red, velvety fruits. It is happiest growing in moist—even swampy—areas. I saw a spectacular specimen at the Henry Foundation in Pennsylvania. Its branches

literally were covered with red berries. *Ilex amelanchier* would be a useful plant for difficult areas with water problems; near swamps; and on the side of a stream, pond or lake.

**Ilex geniculata* is a very rare Japanese deciduous holly. I have only seen two growing in collections. One was at Hilliers in England, and the other is in the Washington Park Arboretum. Unfortunately, ours is a male, so until we can find it a mate from Japan it will have to carry on in lonely splendor.

Another deciduous Japanese holly, **Ilex serrata*, is similar to *I. verticillata*, but smaller in all its parts. The bare branches clothed with tiny red berries make a most appealing bonsai specimen and in Japan it is used extensively in bonsai work. One true miniature of this species is *I. serrata* 'Koshobai'. It is extremely rare in the United States, but I was able to get one in the late 1980s from Miniature Plant Kingdom, a California nursery, when I attended the American Rock Garden Society annual meeting in San Mateo. It is only 3″ high and 5″ across, with berries the size of a pinhead. I have it in the very front of a rock garden. It also grows nicely in troughs.

There are several other deciduous hollies native to the United States, such as *Ilex laevigata*, *I. longipes*, *I. montana*, *I. buswellii*, *I. ambigua*, and *I. curtisii*. However, most of these are not in cultivation.

Trees

The hollies mentioned above all are classified as shrubs, but there are several deciduous holly trees. **Ilex macropoda* from Japan and Korea has clusters of bright red berries. An avenue of them in a national park in Korea is a sight I will long remember. **Ilex macrocarpa* from China is unique with its black berries. Both of these are in the Arboretum's holly collection which is located on the west side of Arboretum Drive East across from the Hamamelis Family area, and north of the Rock Garden. *Ilex micrococca*, from China, has compact balls of bright red berries, but Van Dusen Botanical Garden in Vancouver, British Columbia, is the only garden in North America to grow this species. It is not available to the trade.

Deciduous hollies grow well in our climate. I understand that some Northwest growers are interested in planting some acreage of *Ilex verticillata* so they can sell the branches of dense berries to the florist trade at Christmastime. Several species work well in the Northwest garden. I have three deciduous hollies that I use in front of pines or a laurel hedge. They brighten the somberness of evergreens in winter and give me those interesting berried branches for holiday decoration.

Virginia Morell is past president of the Holly Society of America and a long-time member of The Arboretum Foundation.

Sources of Hollies

Miniature Plant Kingdom, 4125 Harrison Grade Road, Sebastopol, California 95472

Simpson's Nursery Company, 1504 Wheatland Road, PO BOX 2065, Vincennes, Indiana 47591

THE HERBFARM AWAITS YOU just 30 minutes from Seattle in Fall City. Explore the gardens and choose from 639 varieties of perennials, annuals, vegetables, and herbs.
Open everyday, 9-6.

Now Open . . .
Woodland Park Cottage Store
Plants · Gifts · Books
6208 Phinney · Seattle

Everyday, 10-7

The Herbfarm
NURSERY · GIFT SHOP · GARDENS · RESTAURANT · PHONE ORDERS
800-866-HERB

GARDEN WOODWORK
Design & Construction
•Trellises •Arbors
•Fences •Gates
•Privacy Screens
•Vertical Gardening Projects
Bill Langer
324-7096

Trees in Cemeteries

Photos and text by
Arthur Lee Jacobson

Trees combine beautifully with the usual mowed grass and stone monuments typifying cemeteries. Many cemeteries, in fact, offer very much of a park-like setting, except that marble tombstones and memorial plaques outnumber strolling lovers, frolicking children, and folks walking dogs. Other than merely visiting grave sites, such activities are acceptable behavior in virtually all cemeteries, and encouraged in some. Both the public and cemeteries benefit when citizens use cemetery parks.

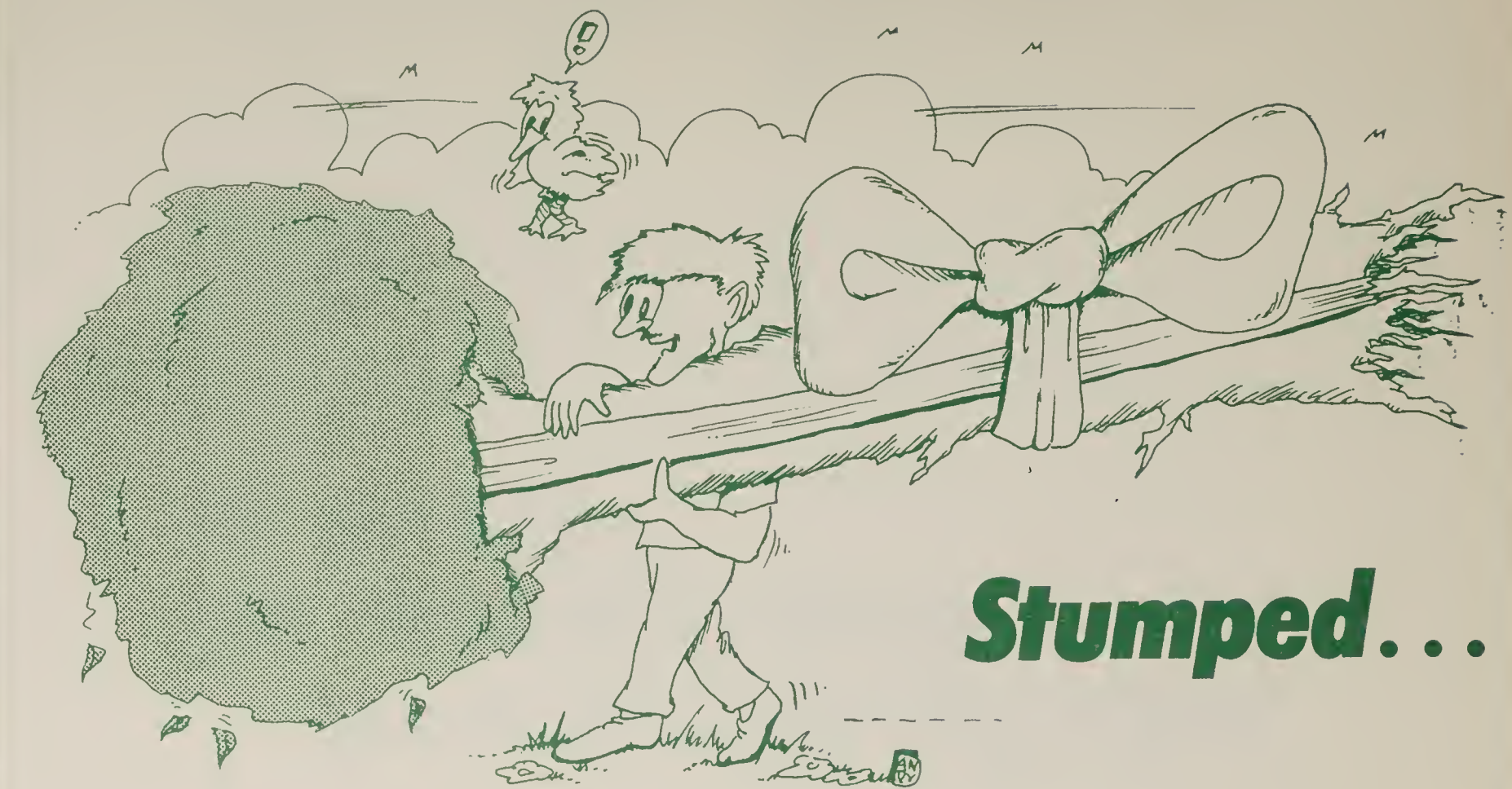
established in the 1830s and onward were designed as "memorial parks." The modern American cemetery offers park amenities: landscaped terrain, pleasing road layout, ponds, vistas, ornamental trees, shrubs, and flower beds. The motive is practical—to please gravesite buyers and visitors alike. Attractive cemeteries are simply more desirable to work in or visit, with higher morale and attendance.

Cemeteries offer a palpable abundance of refreshing life in the grass, trees, and generous expanses of open spaces welcomed in cities. We can set aside any uncomfortable notions we may have about cemeteries and derive much satisfaction from exploring them with a view to tree-watching.

There are reasons why cemeteries offer superior trees. Cemetery trees are relatively free from interference by electrical wires, water and sewer lines, compacted soil, restricted root zones, steam vents,

Camperdown elm (Ulmus glabra *'Camperdownii'), Lakeview Cemetery, resting place of many Seattle pioneers.*

Old-fashioned "graveyards" might have been primarily ordinary acreage in which graves were dug. The Britons of antiquity built their places of worship and buried their dead near yew trees. Some Puget Sound Native Americans placed bodies in the branches of cedars. In contrast, many cemeteries and similar ugly but useful things with which city trees often conflict. Therefore, cemetery trees generally are less damaged and have more room than most city trees. The occasional cutting of roots when digging new graves rarely is fatal. Moreover, once a tree is almost surrounded by full grave sites,



Stumped...

(A gift acknowledgement will be sent from the Foundation office.)

. . . for a terrific gift idea for special friends or family?

We have just the answer....

For Walkers . . . the Washington Park Arboretum is laced with all-weather trails

For the Environmentalist . . . we've got trees . . . . hundreds or more, and birds to match

For the Gardener . . . the Arboretum has plant collections from around the world

Plus . . . ***THE ARBORETUM BULLETIN*** . . . another bonus of membership . . . one well worth sharing with a friend

All of This . . . and more . . . comes with a gift membership in the Arboretum Foundation . . . people dedicated to the care and future growth of the Washington Park Arboretum

You're right!

It's a great idea. . .
I'd like to give Arboretum Foundation gift memberships to the following:

___ Individual/$15 ___ Family/$20 ___ Individual/$15 ___ Family/$20

Name _____ Name _____

Address _____ Address _____

City _____ State ___ Zip _____ City _____ State ___ Zip _____

A gift from: Name _____ Phone _____

(A gift acknowledgement will be sent from the Foundation office.)

Tree Cheers for the Arboretum

THE ARBORETUM FOUNDATION
c/o University of Washington
XD - 10
Seattle, WA 98195

(Upper left) Weeping white mulberry (Morus alba), *Calvary Cemetery, Seattle. (Lower left) Newport plum, the purple-leaved hybrid of* Prunus *'Newport', Evergreen Park Cemetery.*

Lawson cypress (Chamaecyparis lawsoniana *'Erecta Viridis'), Calvary Cemetery, upper right.*

European ash (Fraxinus excelsior), *Ross Bay Cemetery, Victoria, British Columbia, above.*

Yellow birch (Betula lutea = B. alleghaniensis), *Old Tacoma Cemetery, Tacoma.*

its usual fate is benign neglect. It may suffer from too much or too little water or sunlight, bark wounds made by grass mowing equipment, or less-than-ideal lower limb removal. But cemetery trees still are better off than the many trees in other locations whose very existence is precarious.

Favorable growing conditions are happily complemented by the security of long-term stability. That is, most cemetery trees are allowed to live on and on until they die of old age, whereas private-yard trees frequently are cut down when still thriving. Many noble oaks, elms, firs, and pines are now but ghostly memories haunting city yards, streets, and parks. I cannot speak from personal experience of cemeteries elsewhere in North America, but in the Pacific Northwest they tend to be *left alone*, even as the tombs they accent and enshadow.

A great advantage of many cemetery trees is their juxtaposition with monuments. It is pleasurable to explore a cemetery, noting both remarkable trees and inscriptions carved into stone. Thus is wonderfully combined both the pursuit of natural history and human history. What a thrill to find an old, rare, or grandly handsome tree, then minutes later discover nearby an inscription of poignance, humor, or stark elemental brevity. Side by side lie princes, paupers, and unchristened babes. Mighty tombs of massive size are paces away from the humblest headstones. Springy green grass carpets all alike; tree roots encircle every coffin. You can pause to reflect on and be moved by the transience of life and be warmly inspired by the annual growth of trees, bloom of daisies, song of birds, and the way of all life to ever recycle and renew.

When I go to cities new to me, I visit its best-treed parks, neighborhoods, arboreta, school grounds, and cemeteries. Such a pursuit brings broad results: a representative sampling of tree kinds and their respective performance, an overview of the city's geography and historical development, and—my personal joy—individual tree specimens of great stature. I see, learn, get exercise and enjoyment, build my collection of memories and photographs, and finish each day in a state of smiling exhaustion. Blissfully far from the bustle and roar of roads, I note which trees have proved most enduring, healthy, and inspiring, and which have fared poorly. Omitting cemeteries from perusal would be to neglect not only some of the best trees, but some of the most peaceful and contemplative hours. Thus, even in the haunts of the dead, we can feel nature's daily pulse of life; it is strong and drives away all moody, melancholic thoughts!

A closing thought, dressed appropriately in somber, formal garb: That we can pass some time unnoticed, with such an innocent pleasure as walking in a graveyard looking at trees, is just another ho-hum byproduct of our huge, amazing civilization. But it is a heartening tribute to the real wealth of freedom that we can plant trees today that will ensure our descendants the same richness we now enjoy.

Here are my favorite Northwest cemeteries with respect to trees:

Evergreen, Everett, Washington
Evergreen-Washelli cemeteries, Seattle, Washington
Lake View, Seattle, Washington
Old Tacoma, Tacoma, Washington
Riverside, Portland, Oregon
Ross Bay, Victoria, British Columbia
Royal Oak Burial Park, Victoria, British Columbia

Following are cemeteries of national importance:

Cave Hill, Louisville, Kentucky
Greenwood, Brooklyn, New York
Laurel Hill, Philadelphia, Pennsylvania
Lexington, Lexington, Kentucky
Montrose Park, Washington, D.C.
Mount Auburn, Cambridge, Massachusetts
Mount Hope, Rochester, New York
Spring Grove, Cincinnati, Ohio

Arthur Lee Jacobson wrote *Trees of Seattle*, published by Sasquatch Books, Seattle. He has given tree tours of Seattle cemeteries.

William Eng

Close-up of Viburnum propinquum *foliage*

The Evergreen Viburnums in the Washington Park Arboretum

by Brian O. Mulligan

This is the second article in the two-part series on Viburnum.

The Washington Park Arboretum has only twelve species of evergreen viburnums, contrasted with 36 deciduous species. Although evergreen viburnums form a very much smaller group in numbers, their values as evergreen shrubs make them more useful in gardens than their deciduous counterparts, especially in the Puget Sound region and adjacent areas. They are, however, less hardy as a group than those that lose their leaves in winter, so this must be considered when selecting them to plant.

Some evergreen species have been in the Arboretum since the mid-1950s, and at least two of them even longer than that. *Viburnum tinus*, the European laurustinus, was planted as a boundary hedge perhaps in the late 1930s or very early 1940s at the southeastern corner of the Arboretum along 31st Avenue East. The Asiatic *Viburnum odoratissimum*, originally acquired in 1941 from a nursery in California, still thrives on the bank above the parking lot midway along Arboretum Drive East. It was propagated by cuttings from a plant that once grew on the north side of the old Arboretum Foundation offices, just northeast of the Graham Visitors Center.

Nearly all of the evergreen viburnums, excepting *Viburnum tinus* and its near relatives, originate in temperate regions of Asia, from northern India eastwards and across China, where they are most numerous, to Japan, the Philippine Islands, and even further south. Rather strangely, none are native in North America, although there are many deciduous species in the United States, especially in the East.

Many of the Chinese species were introduced by E.H. Wilson in the first decade of the twentieth century, including the closely related trio *Viburnum cinnamomifolium*, *V. davidii*, and *V. henryi*, named for Wilson's early advisor in China, Professor Augustine Henry. Two more are *Viburnum rhytidophyllum* and *V. utile*, both of which have later given rise to hybrids. *Viburnum utile* was one parent of the well-known early-flowering, fragrant *V.* x *burkwoodii*. Frank Kingdon-Ward was responsible for introducing the more tender *V. atrocyaneum*, finding it in northwest Burma in 1931 (Bean 1980).

Although the Arboretum's main *Viburnum* collection is sited between Azalea Way and Lake Washington Boulevard East, west of Loderi Valley, mostly deciduous plants are found there. The evergreens include large old plants of the rather coarse-leaved *V. rhytidophyllum*, with its two hybrids, *V.* x *rhytidophylloides* (*V. rhytidophyllum* x *V. lantana*), of Dutch origin, and *V.* x *rhytidocarpum* (*V. buddleifolium* x *V. rhytidophyllum*), which originated in a French nursery in 1926. Although both of these hybrids are more or less evergreen despite their deciduous second parent, I think we can safely say that *V. rhytidophyllum* is definitely superior to its offspring.

Just south of these are more older plants of *Viburnum tinus*. We have no records of their planting but it probably was in the early 1940s. On the bank to the north, but facing west toward Lake

Glossary (after Grant and Grant)

Glabrous is smooth; without hairs.

Lanceolate means lance-shaped leaf.

Panicle is a branched inflorescence (flower cluster).

Pubescence refers to hairiness.

Rugose is a deeply veined leaf.

Terminal clusters are flowers on the end of a shoot.

Whitie Marten

Washington Boulevard East, are single plants each of *V. utile* and *V. henryi*, planted in 1953 or 1955. The former is now a spreading shrub 5′ to 6′ tall, but considerably wider. The branches are thin and flexible; the leaves extend horizontally, are two to three times as long as wide, and the contrast between the shining dark green upper side and the almost white pubescent underside is remarkable. Clusters of white flowers open in May at the ends of the twigs. *Viburnum henryi* here is smaller, only about 4′ tall, and more upright in habit, but it can be considerably larger under better conditions, according to Bean (1980)—up to ten feet. The leaves are longer and narrower, usually toothed in the upper third or half, the upper side dull green, the lower paler; the branches are glabrous and smooth. The fragrant white flowers are borne in branched panicles (like those of *V. odoratissimum*) in June; the fruits are red at first, turning black when ripe. All in all, this is a shrub worth seeking out and giving a good place in the garden.

On the same bank but above and slightly to the southeast, are two plants of *Viburnum japonicum*. This species is originally from Japan as the name implies (although not always the case with others so named). It was imported from England in 1955 and has grown here ever since. The heads of flowers in June are noticeably fragrant. The leaves are large and ovate in shape, tough in texture, shiny above, but paler beneath and dotted with brown glands—an unusual feature in viburnums. It is evidently hardier than its foliage would lead one to guess.

Other species are to be found in an entirely differ-

Brian O. Mulligan

Viburnum tinus *fruit (top). (Above)* Viburnum cinnamomifolium *flowering in Hillier Arboretum, Ampfield, Hampshire, England.*

ent part of the Arboretum, along Arboretum Drive East. They grow on the bank on the east side of the road above the north parking lot, facing the Williams Camellia Collection. The soil here is sandy and very well drained, but the plants are considerably shaded by large Douglas-firs and other conifers on the bank, which also take up much of the moisture in the soil throughout the year. Here are

HERRON GARDENS

CUSTOM DESIGN
AND INSTALLATION

ANN HERRON
P.O. BOX 69
MEDINA, WA. 98039
454-1216

HERROG #137LQ

several plants again of *Viburnum tinus*, but a different clone from the others, often flowering in January if the weather is mild. Beside them are two plants of *V. cinnamomifolium* from different sources, but they are too suppressed by the trees overhead to show what handsome plants they can be in a more open situation. Much better specimens can be seen on both north and south sides of Anderson Hall, the College of Forest Resources building on the University of Washington campus. In effect, this is a larger edition of *V. davidii*, growing to about 5′ high and as wide or wider, having the same three-veined and shaped leaves, whitish flowers in terminal clusters, and blue fruits (on female specimens). It seems to be about as hardy as *V. davidii*, but a sheltered site, not a windy corner, would be advisable.

Against the Arboretum's Broadmoor fence there is a large old example of the Himalayan and western Chinese *Viburnum cylindricum* acquired in 1956 and now about 14′ tall. The leaves are of softer texture than those of *V. cinnamomifolium* and more elongated. Their waxy surface is easily scraped off with a finger—a very clear distinguishing mark of this species. The flowers are tubular in shape, unlike those of most viburnums, which are generally open and shallow. The plant has been cut back by cold in severe winters but always recovered; this happened again in January and February 1989. A few yards along the bank is a group of the handsome *V. odoratissimum*, already mentioned, but certainly one of the most ornamental and attractive evergreen viburnums that we grow, given a somewhat sheltered site and reasonably good soil. In the wild state it grows in India, Japan, Taiwan, and the Philippine Islands. Our plants have endured a number of severe winters since 1957 when it was planted here, with temperatures as low as 7° F in February 1989, and they always recovered from damage suffered. The large, glossy, laurel-like leaves are evidently quite tough; the panicles of fragrant white flowers are produced in July, later than most viburnums, and are often followed by coral-red fruits in October and November. Altogether, this is probably the most ornamental of our evergreen species, but it should be given a somewhat protected position, like *Viburnum cinnamomifolium*, to give it the best opportunity to display its qualities.

Viburnum propinquum also grows on this bank, but lower down. Until February of 1989 it was a rounded shrub some 4′ to 5′ tall, but the cold weather killed it to the ground, for the first time as far as is known. It is closely related to *V. davidii* and *V. cinnamomifolium*, but the leaves are much smaller and less deeply veined; the flowers are also small, more greenish than white. All the plants in cultivation appear to be male and produce no fruits. A fresh introduction of seeds from China is needed to correct this problem, unless female plants are known in California or elsewhere. It probably would make a suitable hedge, if trained to the required shape in its early years. The plant is recovering from the cold damage by means of new growths arising from the base and on the main branches, but it will take two years without further serious damage to regain its former size. The same applies to *V. atrocyaneum* planted on the bank above the next parking area to the south. *Viburnum atrocyaneum* is evidently even more tender. The growth habit is rather upright, the leaves much

Brian O. Mulligan

Flowering Viburnum henryi *in Volunteer Park, Seattle.*

smaller, rounder in shape. It is probably not well adapted to our periodical cold winters. The berries, when produced, are steel blue.

Continuing south along Arboretum Drive East to the next parking area on the west side there are several forms of *Viburnum tinus* planted behind the concrete wall, including 'Hirtum', 'Purpureum', and 'Variegatum'. The last is perhaps the most distinctive of these, with its variegated foliage. Much more evident is the neighboring *V.* x *pragense* (*V. rhytidophyllum* x *V. utile*), which is quite hardy. *Viburnum pragense* was raised in Prague in 1955, but only reached us in 1967 though the National Arboretum, Washington, D.C. In effect it is a smaller, more compact edition of *V. rhytidophyllum*, and therefore more suitable for local gardens. The lanceolate leaves are 4″ to 5″ long and about 2″ wide; they are deeply veined (rugose) like those of *V. rhytidophyllum* (but less so), the upper side shining, the lower white with a dense covering of hairs and some glands. Flowering time varies from mid-April to early May, according to the particular season. However, this hybrid is grown for its foliage effect, not the flowers.

Two other viburnums remain to be discussed. Large old plants of *Viburnum tinus* var. *lucidum* will be found in the Joseph A. Witt Winter Garden, forming the background on its east side, along with several plants of *Camellia sasanqua*. All were planted in the early 1950s and are still there today. The leaves of this form are larger and more glossy than the usual type; the shrub grows up to about ten feet in height, and the showy flowers open in April, after the others are over. It also is somewhat less hardy than other forms of this species, but came through the trials of 1989's winter very well. It is certainly the best of its species here for both foliage and flowers.

The second, which only has been mentioned previously, is probably one of the best known since it is planted so frequently in public places, including several of the street triangles in Seattle. *Viburnum davidii* is named for Father Armand David, one of the earliest French missionaries to collect plants in western China and send specimens to Paris for identification. Forming a compact shrub 2′ to 3′ in height, it is well suited to open situations and comparatively hard living, so long as the site is well drained; it does not like wet feet. Plants of both sexes will be found at the East Lynn Street entrance to the Arboretum; these were raised from seeds and produced about half male and half female plants. Some others are on the west side of the Japanese Garden. It certainly has proved a most useful introduction, particularly valuable for the blue fruits and compact habit.

Brian O. Mulligan is director emeritus of the Washington Park Arboretum. He helped revise *Trees and Shrubs for Pacific Northwest Gardens*, published in 1990. A video of the Arboretum, featuring Mr. Mulligan, will be out soon.

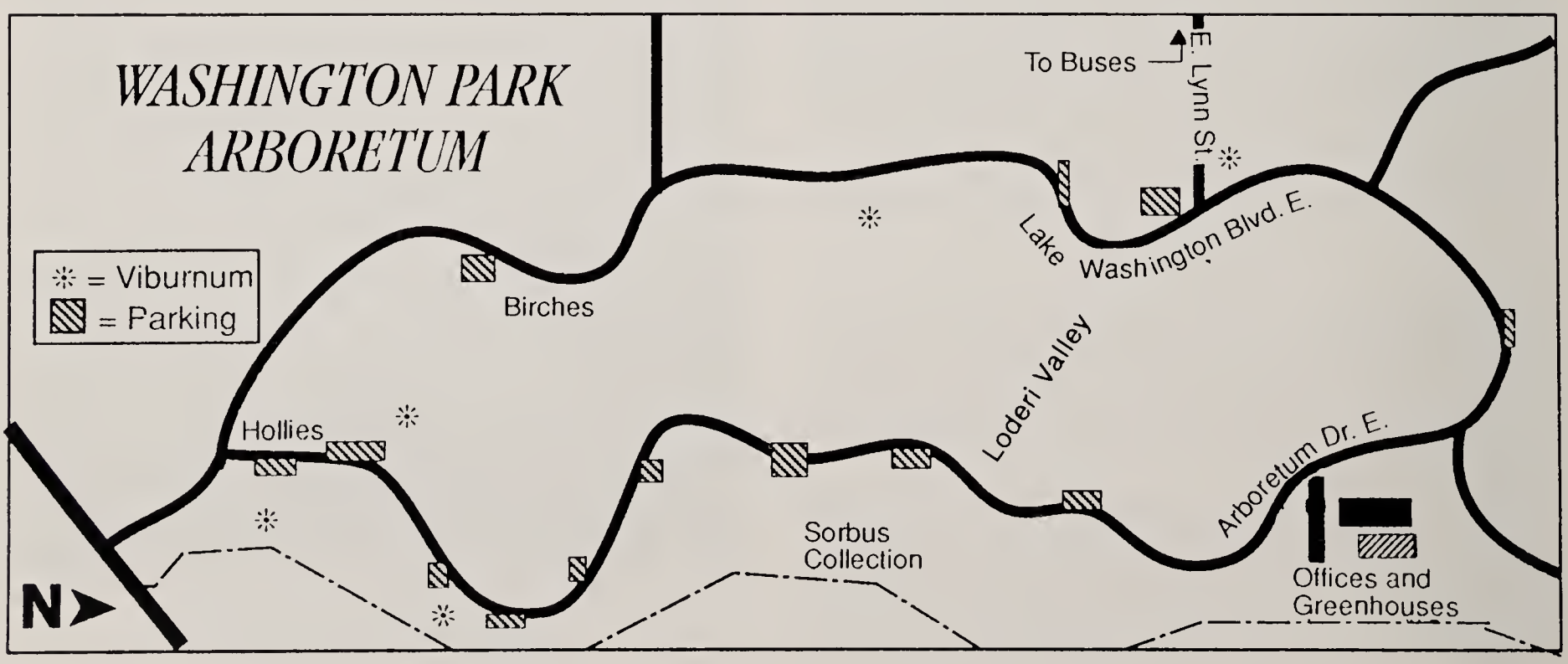
Limited numbers of plants can be propagated by The Arboretum Foundation for members.

References

Bean, W.J., and D.L. Clarke, editors. 1980. *Trees and Shrubs Hardy in the British Isles*. Revised 8th edition, vol. 4. London: John Murray Ltd.

Grant, John A., and Carol L. Grant. 1990. *Trees and Shrubs for Pacific Northwest Gardens*. Second edition. Revised by Marvin E. Black, Brian O. Mulligan, Joseph A. Witt, and Jean G. Witt. Portland, Oregon: Timber Press. (Glossary added by B.O. Mulligan and J.G. Witt)

Hinkley, Daniel. 1990. ''Wayfarers, Doublefiles, and Withe-Rods.'' Part one of a two-part series. *The Washington Park Arboretum Bulletin* 53(1): 4-7.



In the Washington Park Arboretum

by Christina Pfeiffer
and Timothy Hohn

The University of Washington grounds staff has undergone some changes over this past year. After 16 years as gardener at the Arboretum, Alfred E. Mauch retired this past May. Linda Goldsworthy and Jerry Neuman joined our group this summer, filling two vacancies in our gardening staff. Linda has a B.S. in urban forestry from the University of Wisconsin-Stevens Point. Jerry has a B.S. in horticulture from Oregon State University. Both have experience in landscape maintenance and the retail nursery trade.

On the Seattle Parks Department staff, mower operator Richard Hoke was promoted to truck driver. Roger Oyama transferred to the Arboretum, taking Richard's former position. Roger's previous experience in the Parks Department includes equipment maintenance assistant and turf crew assignments. We are very pleased to have these fine people join the Arboretum grounds care operations.

Compost Relocation

Recently, we have undertaken to relocate the Arboretum's compost operation with the help of the Seattle Parks and Recreation Department and the urging of the Seattle Department of Construction and Land Use. The old site of the operation on Foster Island has been regraded and seeded to turf. Arboretum composting operations have been temporarily suspended until a new site is approved and prepared for composting activities. In the meantime, Seattle Parks and Recreation is hauling organic debris out of the Arboretum and providing us with compost and wood chips from remote sites when it is required. We are looking forward to the construction of a more modern, self-contained compost area similar to those being developed at other Parks Department sites throughout the City.

The Arboretum plant propagation and production operation now has access to a new polyhouse at the Center for Urban Horticulture. The new 20 x 40′ quonset-style structure will be used as a shade house/acclimatization area for young seedlings and rooted cuttings in the summer, and as a large cold frame in the winter. This facility greatly improves our plant propagation and production quality.

Noteworthy Accessions of Summer 1990

The first three digits of the following accession numbers indicate the number of the accession; the second two digits are the year of accession.

128-90 *Actinodaphne laucifolia* (Lauraceae family): broad-leaved evergreen, from Korea.

186-90 *Telopea truncata* (Proteaceae family): broad-leaved evergreen tree, from Tasmania.

259-90 *Sorbus poteriifolia* (Rosaceae family): stoloniferous ground cover (spreads its stems on or under the ground), sent as part of Seed Exchange Program by Arboretum Waasland, Belgium.

353-90 *Michelia compressa* (Magnoliaceae family): broad-leaved evergreen tree from cutting of Arboretum accession 301-54.

361-90 *Jubaea chilensis* (Palmae family) seed acquired through the Seed Exchange Program by Academie Scientiarum, Suchum, USSR.

452-90 *Lonicera alseuosmoides* (Caprifoliaceae family) evergreen vine, donated by Dan Hinkley, Heronswood Nursery, Kingston, Washington.

Christina Pfeiffer is the Arboretum's horticulturist.

Timothy Hohn is the curator of living collections, Center for Urban Horticulture/Washington Park Arboretum.

Pruning with Design
URBAN TREE SERVICE
BELLEVUE WA
641-5220

The Northwest Garden Explorer: The Hoyt Arboretum

by Jan Kowalczewski Whitner

An asterisk (*) indicates species, including varieties and/or forms, that can be found in Seattle's Washington Park Arboretum.

Autumn is a bonus season for me. I may do a little planting, raking, and mulching, but my main activity is watching Nature put on her last, most spectacular, color display before winter. It's a good time to tour the Pacific Northwest's natural landscape, where native vine maples (**Acer circinatum*) and big-leaf maples (**Acer macrophyllum*) blaze across mountain slopes, and flaming osier dogwoods (**Cornus stolonifera*) accent creek banks and moist hollows. Fall also is a good time to visit the Northwest's arboreta where a variety of non-native trees and shrubs add their own exotic colors to the landscape.

Portland, Oregon's, Hoyt Arboretum offers visitors an intriguing combination of both native and exotic fall foliage, displayed against the somber greens of one of North America's most notable collections of conifers. The Arboretum is located on a 175-acre site that covers a low-lying ridge of the Tuality Mountain Range. Hoyt seems more spacious than its sister arboretum in Seattle by virtue of borrowing the scenery of two adjoining parks. It seems wilder because it features larger communities of native plants.

Founded in 1928 and administered by Portland's Bureau of Parks and Recreation, Hoyt Arboretum features ten miles of trails, excellent tree signage, and an extensive collection of self-guiding literature for visitors. Like many arboreta established in the first half of the twentieth century, Hoyt arranges its trees taxonomically (by family). Fairview Boulevard, the main thoroughfare, bisects the collections into gymnosperms and angiosperms. The Visitors Center, located on Fairview Boulevard, serves as a hub to a series of footpaths radiating through the Arboretum; each path bears the names of the tree collection through which it passes.

The Redwood-Spruce Trail loops around Hoyt's extensive conifer collection, representing over 230 species, including fine stands of redwoods (**Sequoia sempervirens*) and incense cedars (**Calocedrus decurrens*), as well as unusually vigorous examples of Brewer's weeping spruce (**Picea breweriana*), Himalayan spruce (**Picea smithiana*), and bristlecone pine (**Pinus aristata*). The Oak Loop takes you on a tour of the deciduous trees, including collections of oaks, maples, and magnolias. A one-mile wheelchair-accessible path, the Bristlecone Pine

Redwood Forest at intersection of Redwood and Wildwood trails in Portland's Hoyt Arboretum

John E. Todd

Trail, features representative displays of plant families found in the rest of the Arboretum. Other trails wind through extensive "natural areas" where signed exotics occasionally accent the native plantings.

Since 1985, Hoyt has been moving from strictly taxonomic plant arrangements to some based on geography and themes. Collections of trees and other plants native to several distinct geographical areas are being added, including those typically found in a Chilean forest, a Tasmanian Eucalyptus forest, an English Beech forest, and a Yunnan Valley forest.

Sue Thomas, program director at Hoyt, explains that the geographical displays require painstaking and time-consuming research. "It isn't enough to plant together trees, shrubs, and ground covers that are native to a certain region. We make sure those particular plants actually grow together in natural associations in the wild," she notes, adding: "Acquiring the plant material, once we have targeted it for inclusion, can be a significant problem, too." Hoyt Arboretum and Seattle's Washington Park Arboretum are initiating an exchange of hard-to-find cuttings, seedlings, and plant materials for Hoyt's future geographical displays, according to Thomas. Steve Walker of the Washington Park Arboretum's Pat Calvert Greenhouse is participating in the exchange from Seattle.

In another cooperative venture, the four-year-old Hoyt Arboretum Friends Foundation plans to use Seattle's Arboretum Foundation as a model for upgrading its plant collections, and expanding its education and maintenance program.

A recent planting of summer-flowering shrubs and a winter garden located near the Magnolia Collection northeast of the Visitors Center on S.W. Cascades Drive, are examples of collections arranged according to theme. Hoyt plans to establish a collection of hardy bamboos along a creek and small ravine between the Bristlecone Pine and Himalayan Pine trails, northwest of the Visitors Center (where information is available).

For fall, Hoyt arboriculturist Fred Nilsen recommends viewing "one of the most brilliant contrast in colors in the Arboretum," by trekking the Maple Trail to a point several hundred feet north of its intersection with the Wildwood Trail—just north of the parking area at the Wildwood Trailhead. There you will see a stand of Japanese and common persimmons (**Diospyros kaki* and *D. virginiana*) flaming against a background of golden Lombardy poplars (**Populus nigra* 'Italica').

John E. Todd

Diospyros virginiana *seen from the Maple Trail, Hoyt Arboretum. The fruit ripens after frost.*

How to Find Hoyt Arboretum

Hoyt Arboretum, 400 S.W. Fairview Boulevard, Portland, Oregon 97221. From Interstate 5, take the I-405 exit to Highway 26 west. Get off at the ZOO-OMSI exit. Call (503) 228-8732 for information. Hours: The grounds are open daily from 6 a.m. to midnight. The Visitors Center is usually open 10 a.m. to 4 p.m. Guided tours are Saturday and Sunday at 2:00 p.m. through October, starting at the Visitors Center. Group tours are by reservation.

Hoyt Arboretum offers attractive autumn color from late September to early November with the show usually peaking during the last two weeks of October. The Arboretum will sponsor its 1990 Fall Festival on Saturday, October 20, 1990, with a guided tour of fall color trails commencing at 9:30 a.m.

Glossary

Angiosperm - flowering tree
Gymnosperm - conifer

Jan Kowalczewski Whitner is a freelance gardening writer whose work appears in national and Northwest gardening magazines.

Northwest Hort Review

by Van M. Bobbitt

What Does Your Tree's Root System Look Like?

An asterisk (*) indicates species, including varieties and/or forms, that can be found in the Washington Park Arboretum.

The root systems of trees are commonly perceived as mirror images of the tops—growing as deep as the tree grows tall, with the root spread equaling the branch spread. But studies reveal a much different picture of tree roots.

Root systems usually are shallow and wide spreading. This is because the optimal conditions for root growth—adequate air, moisture, and fertility—are generally limited to the top few inches of soil. Therefore, most of the absorbing roots, the roots that take up water and nutrients, are located in the top twelve inches of the soil profile. Less than ten percent of the root system is likely to exist below that depth. And well-developed tap roots are rare in mature trees in the Pacific Northwest.

Conventional wisdom has assumed that roots extend to the dripline (branch tips), but tree roots actually apread well beyond. Studies of root spread are based on dripline radius (the distance from trunk to dripline). Root spreads have been measured from 1.68 times the dripline radius for green ash (**Fraxinus pennsylvanica*) to 3.77 times the dripline radius for **Magnolia grandiflora*. In addition, most of the absorbing roots are found beyond the dripline. Colorado blue spruce (**Picea pungens* 'Glauca'), for example, was found to have 60 percent of its absorbing roots outside the dripline (Schnelle 1989).

Root systems tend to be asymmetric, too. Roots proliferate when they encounter good soil conditions, but growth is slow and sparse in soils that are droughty, soggy, or compacted. Since soil conditions often differ from one side of the tree to the other, the pattern of root growth will vary as well.

How does this information affect the way we grow and care for our trees?

New Tips for Tree Care:

Herbicide applications: The labels of soil sterilants and some lawn weed killers have warned against application "within the dripline of desirable trees and shrubs." But we now know that this margin of safety must be extended, since most of the absorbing roots exist beyond the dripline.

Fertilizer applications: Fertilizers traditionally were applied only under the tree's canopy, but that makes little sense, considering the location of the absorbing roots. Therefore, more current recommendations suggest that fertilizer be applied to a distance 1.25 times the dripline radius (Harris 1983).

Irrigation: Likewise, sprinklers should be adjusted so that water is applied beyond the dripline.

Construction: Construction projects may harm the root system even though no soil is disturbed within the dripline. The areas fenced off to protect trees at construction sites usually are inadequate. Consider the large *Eucalyptus niphophila* that used to grow near the old Arboretum office building (southeast of the Graham Visitors Center parking lot). Root damage that occurred during construction of the Visitors Center is probably *one* of the factors that contributed to the demise of this beautiful tree.

Planting procedures: Old planting guidelines stated that a planting hole should be twice as wide and twice as deep as the root ball. Current information suggests that a planting hole be dug wide and shallow to resemble the natural shape of a tree's root system.

Nursery containers: Horticulturists also are experimenting with nursery containers that more closely resemble the natural shape of a root system. The containers in which larger trees are grown are often 2′ deep and fairly narrow. Such containers frequently produce trees with circling roots that do not transplant well. But trees grown in wider, low-profile containers develop a more fibrous root system with better transplantability (Milbocker 1989).

Van M. Bobbitt is Master Gardener/Urban Horticulture Coordinator, Washington State University Cooperative Extension.

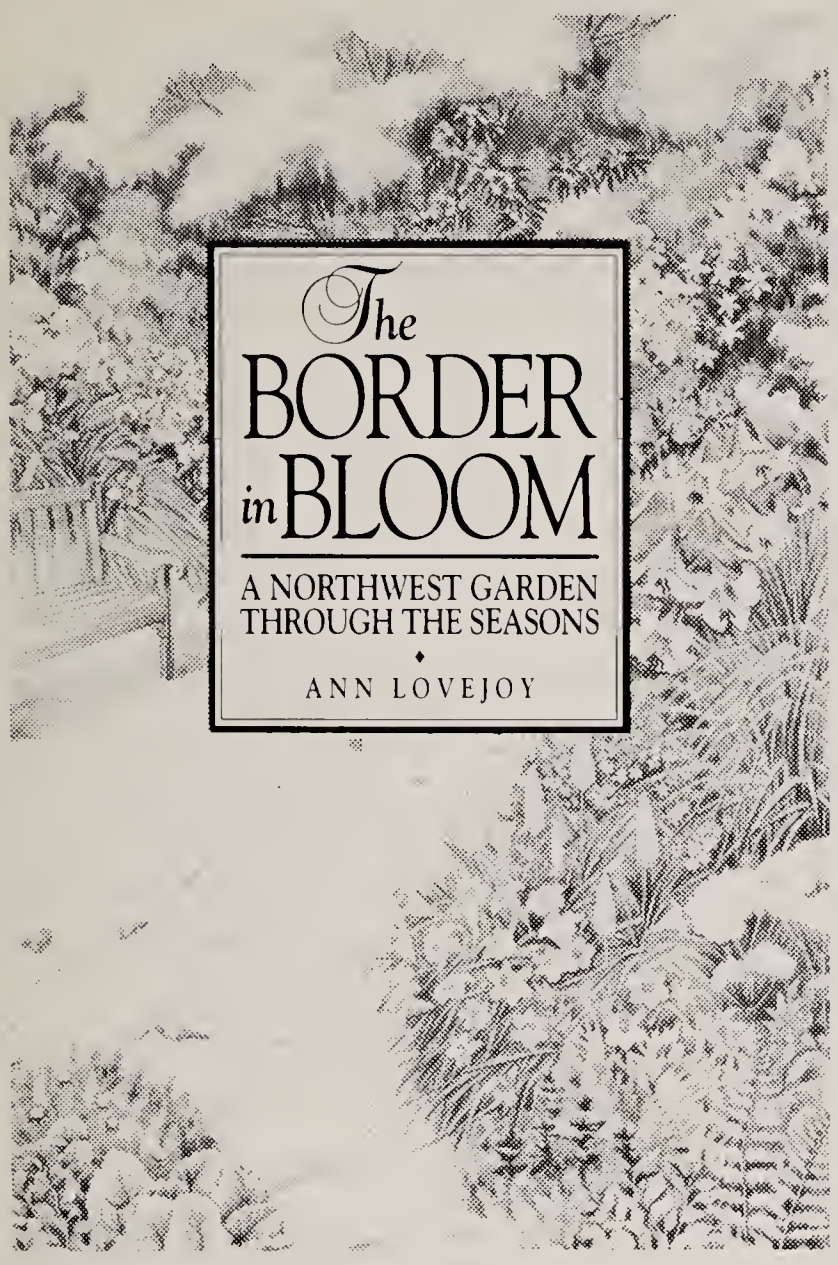
References

Harris, R.W. 1983. *Arboriculture*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

Milbocker, D. 1989. "Differences in Root Growth after Transplanting from Conventional and Low-Profile Containers." *SNA Research Conference* 34: 265-266.

Schnelle, M.A., J.R. Feucht, and J.E. Klett. 1989. "Root Systems of Trees—Facts and Fallacies." *Journal of Arboriculture* 15: 201-205.

Book Review



Ann Lovejoy. Sasquatch Books, Seattle, Washington. 1990. 260 pages. ISBN 0-912365-26-9. $14.95.

Ann Lovejoy's latest gardening book is out and it is well worth a trip to your local book store for a copy. *The Border in Bloom*, like Lovejoy's *The Year in Bloom* (1987) is a collection of articles she wrote for her regular gardening column in Seattle's *The Weekly*. The book is organized by seasons—six, rather than four—and includes an introductory discussion of borders and of each season, including color illustrations of a garden during different times of year. If you can't wait until you read the book to find out, the six seasons are spring, early summer, high summer, autumn, early winter, and late winter.

The illustrations, accompanying plant diagrams, and plant lists are a nice addition because they demonstrate how to actually combine all of Lovejoy's wonderful ideas into one finite garden—well, maybe not all of them, but at least *many* of her ideas. Her gardening style and plant preferences are eclectic, but seem to be grounded in the English perennial garden approach with its emphasis on flower and foliage color; contrasts in plant height and shape; and full, overflowing beds of perennials. Exuberance and abundance characterize her approach to gardening as well as writing.

The Border in Bloom brings to mind a similar anthology of Vita Sackville-West's writing prepared by Robin Lane Fox (Vita Sackville-West. *The Illustrated Garden Book: A New Anthology by Robin Lane Fox* 1986. New York: Atheneum. 192 pages. $22.50; 1989 paperback, $14.95. ISBN 0-689-11844-9). Sackville-West was an enormously popular English gardening writer who wrote a weekly gardening column for the *London Observer* newspaper from 1947 to 1961. With her husband, she also was the creator of the famous gardens at Sissinghurst Castle in Kent.

Like Vita Sackville-West, Ann Lovejoy is an astute observer, a knowledgeable gardener and a talented, entertaining writer. Her newest book is both useful for the home gardener and fun to read.

Mary Booth is a landscape architect. She is a member of The Arboretum Foundation.

Patricia Rineheart Oswald

INTERIOR DESIGN
Residential - Executive Offices
Courtyards and Tea Gardens

PROFESSIONAL MEMBER
AMERICAN SOCIETY OF
INTERIOR DESIGNERS

(206) 525-2207 SEATTLE, WA
Arboretum Foundation member, 40 years

MADISON PARK
HARDWARE

1837 42nd E. 322-5331
GARDEN SUPPLIES • PAINTS • TOYS • GIFTS

New on the Shelves
of the Elisabeth C. Miller Library

Valerie Easton

A variety of excellent new books has arrived in the Miller Library, including a local gardening guide, a celebration of the beauty of the iris, and an eloquent argument in the defense of slightly messy gardens.

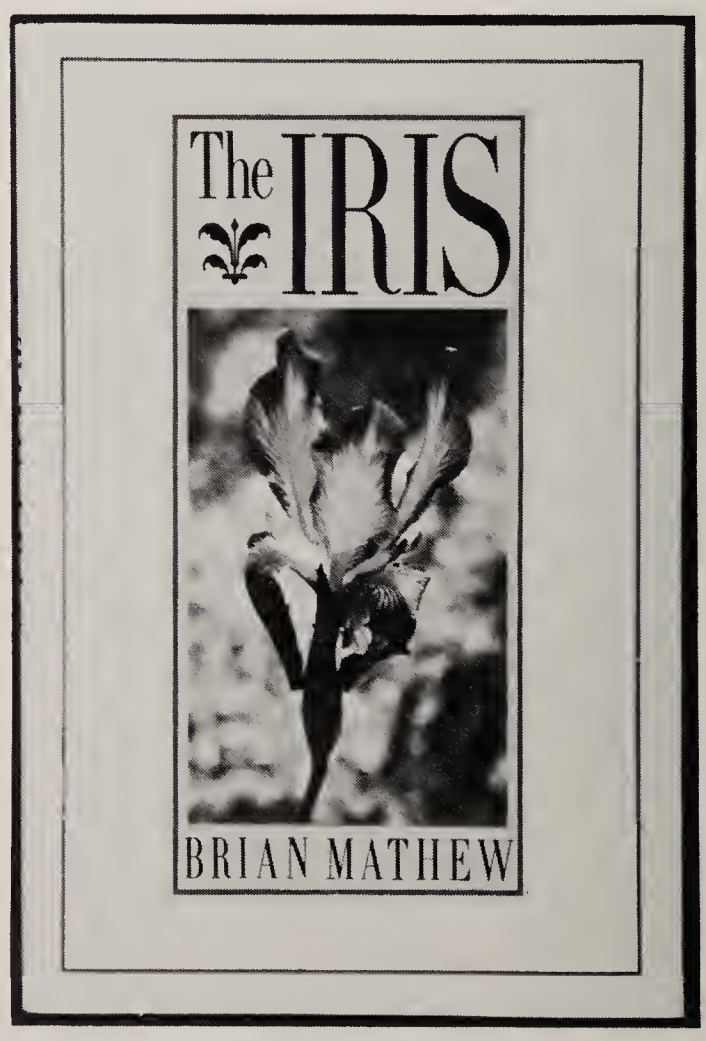
Hager, Ben R. (text). Josh Westrich (photography). **The Iris: The Rainbow Flower.** New York: Thames and Hudson, Inc., 1989. Second in popularity only to the rose, the iris is celebrated here in its extraordinary beauty. The more than 80 photographs of tall bearded iris taken by German photographer Josh Westrich are botanically clear, yet as artistic and evocative as Georgia O'Keeffe's work.

Named after the Greek goddess of the rainbow, iris appear in hieroglyphs carved in stone in Egyptian tombs and are spread throughout the ancient world by the Greeks who were particularly fond of the perfume of their rhizomes. Their long and fascinating history is described here by internationally known iris breeder Ben Hager, along with information on breeding, culture, classification, and details about each iris photo. If this book convinces you of the glory of the iris and its desirability for your own garden, a thorough study of iris can be found in the revised title, *The Iris*, by Brian Mathew in the listing under "Also New" below.

Osler, Mirabel. **A Gentle Plea for Chaos**. New York: Simon & Schuster, 1989. This is an English gardening book in the best tradition: chatty, opinionated, and readable. Mirabel Osler describes the development of her own garden, shown in many lovely and inspiring photographs, with comments on a wide variety of related subjects such as conservation, the nature of gardeners, and garden history. Her point of view is particularly interesting as it parallels the idea of the "new American garden" with its movement away from neatly mown lawns bordered by rows of annuals, to gardens filled with a profusion of ornamental grasses, bulbs, and small trees. Mirabel Osler encourages the gardener to work with the natural order of chaos, and to appreciate the "amorphous confusion which will gently infiltrate and, given time, will one day set the garden singing."

Reddell, Rayford Clayton, and Robert Galyean. **Growing Fragrant Plants**. New York: Harper & Row, 1989. Written by a rose expert who has resolved to grow every fragrant plant possible hardy to Northern California, this beautifully photographed guide to fragrant plants is surely one of the best on the subject. Whereas sweet or spicy scented blossoms come to mind when most of us think of fragrant gardens, Reddell goes far beyond the familiar to recommend planting a variety of scented trees, grasses, vines, and shrubs, as well as perennials, herbs, ground covers, and annuals. Not only blossoms are prized for their fragrance, but also roots, bark, and foliage. Additional chapters cover landscaping ideas and how to dry and use aromatic plants in potpourri, wreaths, etc.

The book is packed with fascinating information any gardener will enjoy. How many of us knew that until 1963 all snapdragons were scentless? Until



hybridizers forced blossoms to "snap" open, snapdragon anatomy didn't allow the pollination needed for fragrance. Now many sweet-scented varieties of *Antirrhinum majus* are available, and they are just one of a great many aromatic plants described alluringly in this thorough and lovely title.

Tarrant, David. **David Tarrant's Pacific Gardening Guide**. Vancouver, British Columbia: Whitecap Books, 1990. Written by a British Columbia plantsperson who thinks of the Pacific Coast as "the land of eternal spring, with a few hot days in the summer for a change," this manual is filled with practical ideas to take advantage of northwestern North America's long growing season. He covers a wide spectrum of gardening topics on a fairly basic level, including a garden calendar, that will be especially useful to newer gardeners. Clear line drawings illustrate pruning, planting, and propagating techniques. More experienced gardeners will appreciate suggestions for soil building, organic pest and weed control, and plant selections ideal for our climate from the west coast of British Columbia south to Oregon.

Also New:

Foote, Leonard E., and Samuel B. Jones, Jr. **Native Shrubs and Woody Vines of the Southeast: Landscape Uses and Identification**. Portland: Timber Press, 1989.

Fryer, Lee, and Leigh Bradford. **A Child's Organic Garden**. Washington, D.C: Acropolis Books, Ltd., 1989.

Horst, R. Kenneth. **Westcott's Plant Disease Handbook**, fifth edition. New York: Van Nostrand Reinhold, 1990.

Jones, Carolyn. **The Complete Guide to Perennials for Amateurs and Experts**. Vancouver: Whitecap Books, Ltd., 1990.

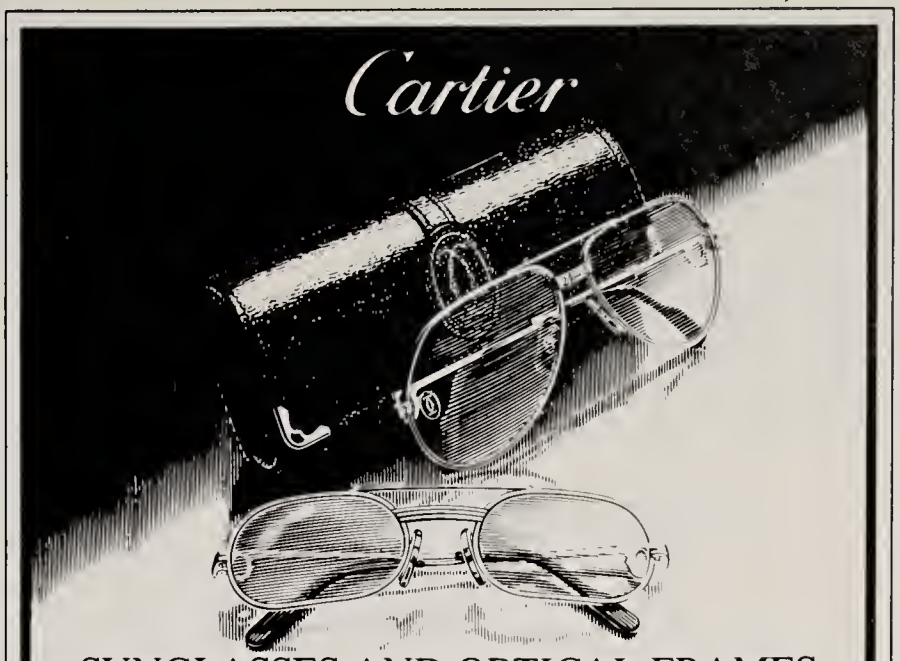
Mathew, Brian. **The Iris**, revised edition. Portland: Timber Press, 1990.

Missouri Botanical Garden. **A World of Plants: The Missouri Botanical Garden**. New York: Harry N. Abrams, Inc., 1989.

Plumptre, George. **Garden Ornament: Five Hundred Years of Nature, Art, and Artifice**. New York: Doubleday, 1990.

Raphael, Sandra. **An Oak Spring Sylva: A Collection of the Rare Books on Trees in the Oak Spring Garden Library**. Upperville, Virginia: Oak Spring Garden Library, 1989.

Smith, Richard M. **Wild Plants of America: A Select Guide for the Naturalist and Traveler**. New York: John Wiley & Sons, 1989.



SUNGLASSES AND OPTICAL FRAMES
from Cartier-Paris

This collection dramatically demonstrates what happens when the world's most famous jewelers turn their attention to eyewear: quality materials, real craftsmanship, creative detailing, and a commitment to style and design integrity.

All the classic Cartier touches are here: The steel and gold Santos look, the two-toned ribbed "rolling ring" motifs, the burgundy color accents, and the famous interlocking "C" signature. Each pair is made in precious palladium and finished in 22K yellow gold. From $480 to $1,080.

THE Eyeworks

709 Broadway East, Seattle, WA 98102
Capitol Hill, (206) 328-4386

FILOLI

Renowned for its 16 acres of exquisite formal gardens and historic 43 room mansion, Filoli is a 654 acre estate set against the verdant California Coast Range. A National Trust property located 25 miles south of San Francisco.

Open Tues.–Sat. 10-3 by reservation; no reservation needed Fridays and some weekends. Fee. No children under 12 except on nature hikes.

Filoli
Cañada Road, Woodside, CA 94062
(415) 364-2880

Horticultural Reader

by Valerie Easton

Highlights are given of current journal articles interesting to the Pacific Northwest gardener and horticulturist.

American Horticulturist April 1990, 69(4): 12-28. Much of this issue is about Seattle plants and gardens. From the Meerkerk Rhododendron Gardens on Whidbey Island, to Elisabeth Miller's diverse collection of unusual plants, to an exploration of the Seattle gardening style by Jerry Sedenko, each article is beautifully photographed and shows Seattle gardens and gardeners at their impressive best.

"Composition in Pink: Japanese Color Style for a 'Northwest Natural' Garden," by Jan Kowalczewski Whitner. ***Garden Design***, winter 1989/1990, 8(4): 50-55. Northwest gardens have been well represented in national magazines in recent months. This garden on the shores of Lake Oswego, Oregon, is notable for its use of Japanese design principles adapted to Northwest terrain, scale, materials, and vegetation. The result is an unusual garden using rock, hardscape, waterfalls, and ponds, as well as a variety of pink-flowering trees and shrubs chosen for fall and/or spring color, lush foliage, and growth pattern. An extensive plant list is included.

"A Mouth Watering Dry Garden," by Joan Hockaday. ***American Horticulturist***, October 1989, 68(10): 17-23. On a four-acre site in a valley twenty miles east of San Francisco, Ruth Bancroft has worked for two decades to create a thirstless garden. The reasons it is so successful—strong architectural elements, pleasing color combinations, and plants appropriate to existing soil and weather conditions—are lessons of value to all gardeners. Such a lovely and varied garden can be created in drought conditions, a fact of special interest to all western gardeners dealing with our changing weather patterns and increased sensitivity to excess water usage.

"A Talent with Trees," by Ann Lovejoy. ***Horticulture***, November 1989. 67(11): 32-38.

Beautifully described here is an impressive collector's garden in the West Hills outside Portland, Oregon. Jane Platt, whose father created the famous Bishop's Close garden in Portland, has for over forty years created a garden both tightly planted yet expansive, using a great many uncommon plants in effective combinations. Her rigorous thinning and pruning allow each plant the room it needs and creates spaciousness amidst profusion, and her unusual plant selections may be of particular interest to Northwest gardeners.

All of the preceding books and journals can be found in the Elisabeth C. Miller Library, Center for Urban Horticulture, University of Washington. The library is open 9 a.m. to 8 p.m., Monday; 9 a.m. to 5 p.m., Tuesday through Friday.

Valerie Easton is a librarian at the University of Washington Center for Urban Horticulture.

FLORA & FAUNA BOOKS

Natural History Book & Print Specialists

A Full Range of the Best Books in
Botany & Horticulture Always in Stock

Specializing in British Books

- **Timber Press**
- **RHS Kew Handbooks**
- **Collins Field Guides**
- **Ortho Books**
- **New and Used Books**
- **Collections Purchased**
- **Search & Order Service**
- **Mail Service**

In the Pioneer Square area, 1 block from Elliott Bay Books

121-1st Ave. S. - Seattle, WA 98104 - Mon-Sat 10-5
623-4727

DATE DUE

APR 11 1994

DEMCO 38-297

UNCO
BEA

WELL
NUR
8300 Northeas

JS NURSERIES

ear
tion

1940-1990

Growers and
Propagators of
Choice Nursery Stock

ellevue ✧ Bremerton

Northwest Flower and Garden Show

February 15-18, 1991 (Presidents' Day Weekend)
Washington State Convention Center • Seattle

Established in the tradition of the great spring flower sho
Philadelphia, Boston and London, this is the Northwest's annua
horticulture, garden design and the floral art

Five acres of exhibits, including

•30 Fully Landscaped Gardens and Major Exhibits • 260 Comm
• 50 Educational Exhibits • Amateur Competitions for Horticulture and Flo
• 90 Lectures and Seminars • Botanical Illustration Exhib

Delight in a Preview of Spring
premier spring flower and garden sho

1991 Amateur Competitio
Contact show off

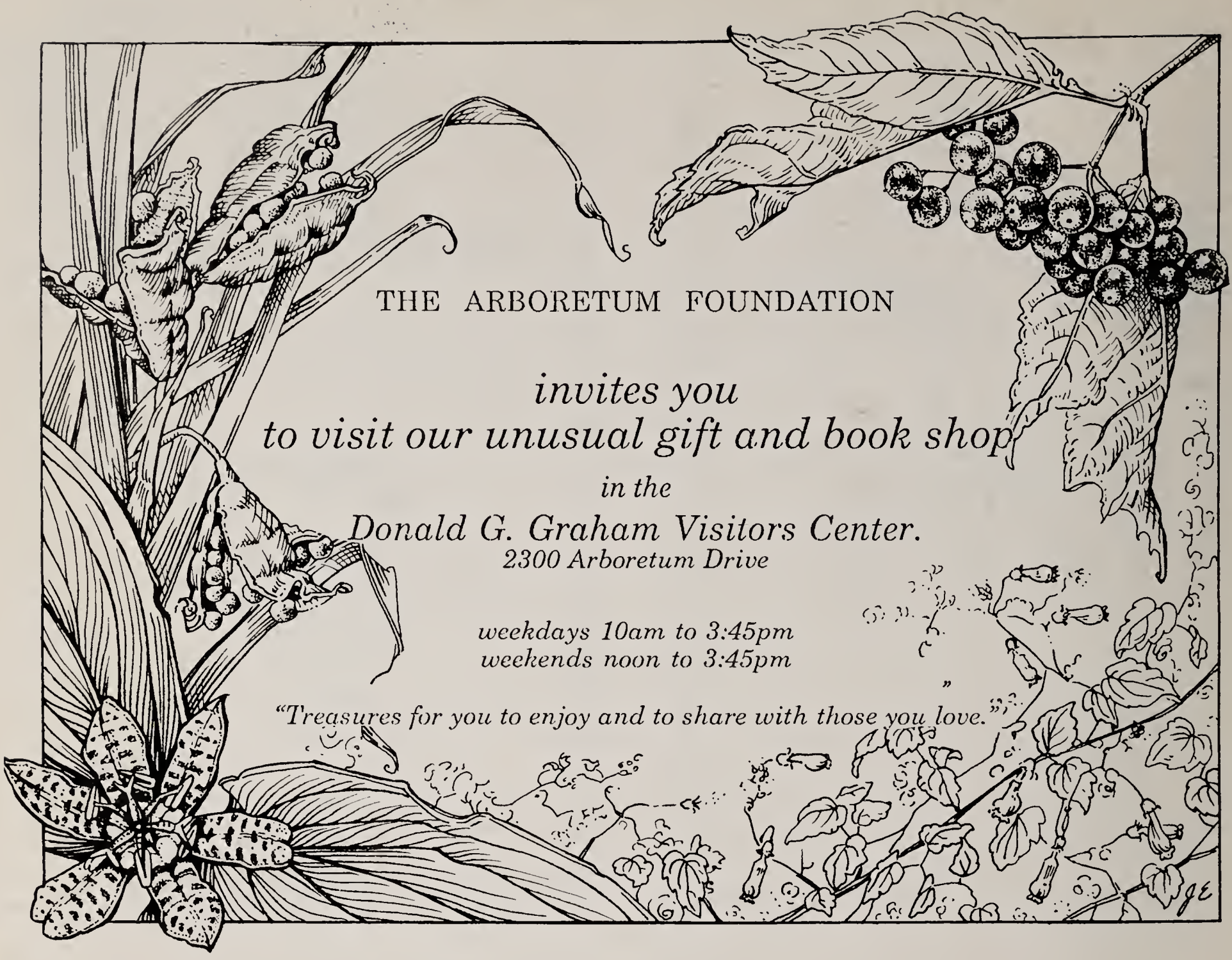
Preview party evening of February 14, spon
Washington Park Arboretum. For Preview

.U.

Show Headquarters • 1515 NW 51st Sr

ne (206) 789-5333

This Book May Be Kept
14 DAYS
ONLY
It Cannot Be Renewed Or Transferred



THE ARBORETUM FOUNDATION

invites you
to visit our unusual gift and book shop

in the

Donald G. Graham Visitors Center.
2300 Arboretum Drive

weekdays 10am to 3:45pm
weekends noon to 3:45pm

"Treasures for you to enjoy and to share with those you love."

Published by the
Arboretum Foundation
Washington Park Arboretum
University of Washington XD-10
Seattle, Washington 98195

NON-PROFIT ORG.
U.S. POSTAGE PAID
SEATTLE, WASHINGTON
Permit No. 126

An *arboretum* is a living museum of woody plants for education, conservation, research, and display.

HORTICULTURE
WA 98195